

North East Scotland

A Survey of its Development Potential

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A Survey and Proposals

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Introduction

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In October 1966 a group drawn from the University of Aberdeen and, in the case of one member, from the North of Scotland College of Agriculture, was asked by the Regional Development Division to undertake a survey of the development potential of North-East Scotland. This Report presents the findings and conclusions of this survey. Apart from this Introduction and a final set of Appendices, the Report is in two Parts. Part I, which has been written by myself, as Director of the survey, begins with a summary statement of the problems of the region as we see them, looks at the particular position and problems of Aberdeen City and then proceeds to argue our major conclusions on the directions which the regional planning of the North East should take. This Part concludes with a chapter which summarises all the conclusions and recommendations, including those which relate more closely to the analysis of Part II. Part II of the Report contains the studies in depth of planning factors, population, and the economic structure and trends of the region—studies which have been conducted by individual members of the team and which provide the basis and points of departure for much of the argument of Part I. In the latter Part only Chapter 2, on Aberdeen City, and the Appendix entitled 'A Possible Distribution and Regrouping of Population' which follows Chapter 3, contain evidence which is not to be found in one or other of the chapters in Part II. Finally there are appendices in which will be found those statistical tables which it was necessary to present, though not in the text, together with some short discussions of technical points, both statistical and analytical, which it was not appropriate to include in the chapters to which they relate.

The research team which has conducted this survey was drawn from five departments of the University, with one member from the North of Scotland College of Agriculture. Individual members, all working in the intervals of normal teaching duties, have been responsible for the sections of the survey which, in Part II, bear their names. But this has been a team effort: there has been a great deal of interchange of information and ideas at all stages, and the conclusions and recommendations reached have been the product of long discussion and ultimate agreement among us. The work of assembling and analysing our data has been greatly

lightened by the competent help of our Research Assistants, and we have been most fortunate in our secretarial assistance.

In gathering information we have drawn on many sources, including numerous organisations and individuals in the North East and elsewhere. We are indebted to Government Departments and other public bodies who have helped us freely with information and whose constant advice on its interpretation has been available to us. We have relied heavily on the local government authorities of the North East to inform us about the services they administer, about their own development policies and plans, and about the characteristics of their own areas. At an early stage, a Working Party on Physical Planning was set up consisting of county planning officers, officials of the Scottish Office, myself as Director of the survey and the members of the survey team most directly concerned with questions of physical planning. This provided us with clear lines of communication with local authorities, and a means of clarifying both what was needed in the way of data and what was available.

The North-East Consultative Group was set up almost at the same time as our work began. From the beginning this body has maintained a close interest in the survey and has given us consistent support in our approaches to various bodies. It has also provided us with information collected by its own sub-committees in the course of examining questions of major interest to the survey.

But as well as public authorities and bodies, we are indebted to a large number of individuals and organisations in the commerce and industry of the area who have given us information through questionnaires and personal interviews. Altogether we distributed five questionnaires to private concerns: to manufacturers, large retail distributive concerns, road hauliers, construction firms and landowners. These drew varying responses and some were undoubtedly disappointing. However, those who did return the questionnaires took care with their answers, while many who did not responded to personal approaches. We wish to record our thanks to all who have helped us.

Finally, among these acknowledgements we must record our debt to a research team in the Department of Social and Economic Research of Glasgow University who have generously

made available information about the labour force in one locality of the North East, which they have collected for a comparative study of labour markets.

Terms of Reference and Scope

The survey which we were commissioned to make sprang from the White Paper *The Scottish Economy, 1965-1970: A Plan For Expansion* (Cmd. 2864), published in 1966: we shall refer to this document, for brevity, as *The Scottish Plan*. In its forward look at development down to 1970, the *Plan* laid stress on the relations between the various regions of Scotland and the contributions that could be expected from each to the overall development of the Scottish economy. As a foundation for this regional emphasis, *The Scottish Plan* presented short studies of several of the regions of Scotland, including one of the North East which was taken as the starting point of this survey.

The agreed terms of reference to the team were set out as follows:

"The Survey will take as its starting point the Regional Study of the North East contained in the Appendix A of *The Scottish Economy 1965-1970* (Cmd. 2864, H.M.S.O.). Its aims will be:

- (i) to examine further the current economic and demographic trends in the North East of Scotland and their likely course during the period up to 1975, bearing in mind the possible role of the region in the longer term;
- (ii) to consider how within the framework of the Government's economic policy and the provisions of the Industrial Development Bill, the Government's stated aim of encouraging the expansion of population in Aberdeen and selected centres in the North East can best be achieved;
- (iii) on the basis of (ii) to suggest directions for industrial steering policy and for the planning and provision of supporting services of all kinds during the same period."

The Industrial Development Bill referred to in the second clause of the remit has since become statute. Also certain other major additions have been made to the armoury of regional policy instruments. But we interpret this clause essentially as directing our attention to the aims of regional policy which are to induce faster growth and a more buoyant economic environment in areas, such as North-East Scotland, which have not shared proportionately in the expansion of activity of other parts of the United Kingdom. In developing a regionalised strategy for Scotland *The Scottish Plan* did project a fairly specific role for the region during the late sixties and the 1970s. In our own survey we have not felt ourselves constrained by this particular conception of the region's role; but as a statement in an important official document we have obviously had to take it into account, along with the considerations on which it was grounded.

There is one major difference of definition between our survey and *The Scottish Plan* that must be stated immediately. In the *Plan* the boundaries of the 'North East' were drawn widely to include Angus and the greater part of Perthshire; it was, in fact, the 'North East' as hitherto defined for Census purposes. But since the publication of the *Plan* Scotland has been re-divided for regional planning purposes into eight 'planning regions'. The North-East Planning Region now comprises the counties of Aberdeen, Banff, Kincardine, Moray and Nairn, and the City of Aberdeen; this is the area with which we are concerned in this Report. This raises a terminological point which must be cleared up at the outset. In the context of national policy the word 'region' normally refers to the 'standard regions' into which the whole of the United Kingdom is divided and of which Scotland—along with Wales, North-West England and so on—is one. But Scotland is itself now divided into eight 'planning regions' and the term 'region' is widely used for these areas although strictly, in the national context, they constitute 'sub-regions'. The range of our reference and comparison within this Report is bounded very largely by Scotland itself, and within this context the word 'region' is the more natural and acceptable description for the North East. We shall therefore throughout this Report describe the North East as a 'region'. This has the incidental advantage that the term 'sub-region' can be used for sub-divisions of the North East. But, to add a further slight complication, we shall also speak of the 'Aberdeen City region' meaning by this the City and the surrounding zone—of indeterminate depth—which relies on it closely for work purposes and for all but day-to-day service needs. This is justified on the grounds that the term 'city region' has passed into general use for this type of area.

What have we set ourselves to do in this survey? Our first object has been to look at the North-East region as it is today—at its population and economy, and at the geographical distribution of both—to assess the present demographic, economic and locational trends at work in it. The immediate objective of regional economic planning in North-East Scotland (though not the sole or ultimate one) must be the retention of population within the area. This has led us throughout our examination of economic trends to emphasise their significance for the level and structure of employment. We have tried to project the future opportunities for employment down to the mid-seventies. For this purpose, at this stage of our analysis, it has been necessary to assume the existence only of those conditions and policies which are currently in operation. But our terms of reference require us to go beyond a diagnosis of trends in the region, "to suggest directions for industrial steering policy and for the planning and provision of supporting services". We have interpreted our prescriptive function as, first, to consider what overall development objectives the North East should aim at—in terms of employment growth and population; and, secondly, to recommend lines along which the

action to achieve these goals should proceed. This raises important and difficult issues of regional planning, not the least of which revolve round the authority and machinery of planning. Some of these issues would have been clarified, if not resolved, had the Royal Commission on Local Government in Scotland reported in time for us to take their findings into account.

Physical Planning Factors and the Survey

'Regional planning' means planning to provide infrastructure and housing either to meet an anticipated development of industry and population or, more positively, to lead that development in certain directions. Because location—of population, of services, of industry—is centrally involved in regional planning, physical planning factors play a large part in it. In this survey these factors have commanded a good deal of our attention. At the same time we have seen it as no part of our task to embark on highly detailed planning prescriptions for the physical development of specific areas and towns within the North East. Unlike recent studies of other parts of Scotland, our remit did not require us to prepare a programme for the absorption and location of a specific increment of population. Also the extensive nature of the North East, the fact that its capacity to absorb much higher numbers of people than it now carries is not in question, has prompted a difference of approach, with less emphasis on physical capacities than in some other regional studies.

But development on any scale inevitably poses locational questions. The population of North-East Scotland is falling, and falling a much faster pace of economic expansion will go on doing so. Furthermore, quite apart from the decline in numbers, the people of the North East are redistributing themselves within the area; and important questions are how far this trend should be guided in particular directions, and if so where. The position taken here is that

the careful location and concentration of population that is on the move because of economic change, or retained in the area through the efforts of regional policy—the location of this population is a vital part of the strategy for accelerating the expansion of industry and employment within the region.

In considering such a strategy, we have given much attention to location, and also to the numbers of people who might have to be accommodated or rehoused if regional policy achieves the objectives which the situation of the North East demands. This has inevitably led us into some examination of physical planning factors. We must make it clear, however, that we have not proceeded beyond feasibility studies conceived in broad terms, and designed essentially to sustain, by reference to physical constraints, our recommendations for the economic planning of the region. In these studies we have been assisted by the planning staff of the Scottish Development Department.

Time Period of the Survey

Our remit required us to look at the period from 1966 until the middle of the 1970s, "bearing in mind the possible role of the region in the longer term". When this Report appears the middle seventies will be much less than a decade ahead, and to restrict our survey to this period would make it rather a short-term exercise. Furthermore, the recommendations we make, if realised, will influence events far beyond the mid-seventies. In practice therefore we have not felt ourselves unduly restricted by the date mentioned in our terms of reference. Where we attempt numerical projections of, say, population or employment, we do in fact terminate them in 1975 or 1976; and indeed, given the obvious uncertainties, there is little to be said for pushing such forecasts any further into the future. But, elsewhere, where necessary we have not hesitated to extend our view beyond the middle seventies.

Regional Problems and Planning

The Character and Problems of the North East

1.1. The North East of Scotland as defined for our survey is an area of long settlement whose people have developed a marked character of their own, a character which emerges in their speech and in less easily definable features and attitudes. It contains a population of just under 450,000; this puts it fourth in the order of size of the eight planning regions of Scotland. But it is better to distinguish it as the most populous of the outer regions of Scotland—that is, of those lying outside the Central Lowlands and their extension along the Firth of Tay.

TABLE 1.1
*Populations of the Scottish Planning
Regions in 1967⁽¹⁾*
thousands

1	Glasgow	2,492.0
2	Falkirk/Stirling	274.7
3	Edinburgh	1,020.1
4	Tayside	450.1
5	Borders	105.3
6	South West	152.6
7	North East	448.0
8	Highlands	277.8

⁽¹⁾ R.G.S.: mid-year estimates

1.2. The character of the region, from an economic as much as from a human point of view, is greatly influenced by the way in which its population is distributed. The overall impression formed here is of a predominantly rural region which, apart from Aberdeen City, contains a lot of small towns and villages, many of them situated on the coast (see Fig. 1.1). There is an obvious truth in this, as evidenced by the thirty-two small burghs of the region, many of them very small indeed. But it is also misleading in that it fails to take account of the extent to which the population is in fact concentrated. The first and obvious example of this is Aberdeen City itself. About 210,000 North Easterners live in and immediately around the City; and if one takes a circle of roughly 16 miles radius, bringing in the burghs of Stonehaven, Banchory (18 miles away), Inverurie and Ellon, the total population enclosed reaches 240,000. There are no other concentrations to match this, but there are two others that are quite surprisingly big. One embraces Elgin and its surrounding region: here, a circle of radius 16 miles from the burgh would enclose a population of some 65,000 people. And

the other is in Buchan, where 47,000 people live within a 16-mile circle drawn from a point midway between Peterhead and Fraserburgh.⁽¹⁾ Thus although it is true to say that the North East is, economically speaking, a small region yet it does have sizeable concentrations of population capable of providing viable bases for development. At the moment, and with the exception of Aberdeen City, these concentrations are not as effective in providing a labour supply as they might be owing to the low mobility of labour within them. This is a legacy of the traditional occupations of the region, and it places a far from negligible limitation on the present development potential of these zones. One of the most important tasks for regional policy in the North East is, by all possible means, to extend the range of local labour markets. It is so important that we shall return to it repeatedly in this Report.

The Unity of the North East

1.3. At this point it is necessary to ask the question: does the North East as defined and studied by us constitute a unitary 'region', in the general meaning of that term? Does it in any sense 'cohere' as a regional economy and society? What constitutes a 'region' is a complex question: various criteria—economic, geographical, social, administrative—may be used to draw its boundaries, and each may give varying answers for any one area. Economic criteria are clearly of prime importance. An area which is chosen as a unit for the purposes of economic planning is going to receive some kind of uniformity of treatment; and whatever the degree of positive intent in a plan, some overall pattern of relatedness must inform the planner's view. If this does not correspond with the actual pattern of relations within the area, the intention of the regional planners may well be frustrated.

1.4. If we look at the North East in the light of these remarks, it must be recognized at the outset that certain parts do not 'cohere', in the sense of having their major economic and service relations with other parts of the region. The border areas of South Kincardineshire and Nairn are in question here. Much of Kincardine south

⁽¹⁾ These are approximate figures arrived at by combining totals from the 1961 and 1966 Censuses. Using the Registrar General's estimates for mid-1967 would actually produce larger figures—over 70,000 in the case of the Elgin area.

of the Mounth is geographically an extension of Angus; many of its economic ties are with places lying outside our study area. The same may be said of Nairn where movement for work and other purposes tends to be towards Inverness rather than to the nearest major North-Eastern centre, Elgin. But leaving aside these border zones all the evidence suggests that the North East as we define and survey it does function as a 'region' and this is due largely to the dominance of Aberdeen City. The City, eccentrically situated though it is, is an integrating force of considerable power. Much of its influence here flows from the major services, particularly in the educational and medical fields, which it dispenses to the whole region. These are, of course, at one level, administrative creations; but the organizational arrangements which have arisen in recent decades do follow traditional patterns which have grown up because of the City's size and its historical role as a university town. Furthermore, as the nearest major urban centre it continues to draw people from considerable distances to its shops and its entertainments, and also more permanently as migrants to its jobs.

1.5. There is nevertheless a distinct weakening of Aberdeen's influence as one proceeds in a north-westerly direction. Along this line, in the lowlands of Moray, Elgin takes over some of the servicing role of Aberdeen. There is also a detectable tendency for rural migration into Aberdeen City, a long-standing demographic feature of much of the North East to drop off in this part of the region. It appears in fact that Moray, with the adjacent parts of Banff and Nairn, forms a sub-region centred on Elgin. This area looks to Aberdeen City for its 'higher level' services, and for some of its economic needs; but it has a considerable measure of social and economic autonomy. But this relative independence of Moray notwithstanding, the existence and functions of Aberdeen as the nearest city, supplying services at varying levels to the whole region, undoubtedly gives a unity to the area constituted by Aberdeenshire, North Kincardine, Banffshire, Moray and the eastern edge of Nairn. To the problems and prospects of the region, we now turn.

The Problems of the North East

1.6. The North East of Scotland presents a particular variant of the difficulties besetting all the economically 'lagging' regions of Britain. The problem, which is basically one of 'growth', has two outstanding symptoms. The first is a relatively high rate of unemployment. The second is a level of outward migration—both to the rest of Britain and overseas—which is so high as to exceed the natural increase of the population. It must be stressed that these are symptoms of the same malady; they are connected with other significant conditions arising from the basic slowness of growth.

1.7. The rate of unemployment in the North East, although fluctuating with the course of the trade cycle, is, on average, markedly higher than the national (British) rate. For example, in 1966 and 1967 the unemployment rates for Great Britain (registered unemployed as a percentage

of total employment) were 1.5% and 2.4%; in North-East Scotland the corresponding rates were 2.8% and 3.2%. These are average rates of course; unemployment is not uniformly distributed within the region, and in towns like Peterhead, Banff and Buckie it can rise as high as three or four times the national figure.

1.8. But rates of unemployment, though revealing in themselves and pointing to the major problem, are altogether inadequate as a measure of the economic difficulties of an area like the North East. It is essential to bring into the picture migration and population changes on the one hand, and the participation rates of the labour force on the other. As we have said, net migration from the area exceeds the natural increase by a clear margin; as a consequence the total population is declining, though slowly. Indeed, it is the fact of migration which, as in similar regions elsewhere, prevents the unemployment rate generally from reaching higher levels than they do. It is certainly migration which keeps the Aberdeen City rate lower than elsewhere in the North East (though it is still above the national figure).

1.9. An associated symptom of slow economic growth in an area is a low participation, or activity, rate of the working population. This rate, which may be calculated in more than one way, provides a measure of the extent to which the potential, or employable, labour force of a region is actually working. Thus, in the North East in 1966, 82.6% of the male population aged 15 and over were 'economically active'—that is, were working (including those in a self-employed capacity) or had registered themselves as willing to work;⁽¹⁾ and the figure for women was 36.8%. The corresponding figures for Great Britain were 84.0% and 42.2%. The differences between the two sets of figures, while calling for care in interpretation, are a measure of the extent to which potential labour resources in the region may be unused. Various factors affect these rates in different places, but a prime cause of a low rate is a relatively slack demand for labour. Where expansionary forces are strong, many people (and particularly married women) are drawn into employment who, in a less buoyant economic environment, remain outside the labour force as it is measured statistically. In the lagging regions this represents a supply of labour which, given suitable opportunities, can be brought into effective employment.

1.10. But the effects of a comparatively slack demand for labour go even further than this. In areas where this condition exists the efficiency of use of the employed labour force tends to be lower than in the more expansive regions. Because the supply is relatively abundant, labour is absorbed into occupations where its productivity is low. It is difficult to quantify this, but there are clear signs (including a low average level of wages) that much labour in the North East is employed in work where its productivity is low by national standards.

⁽¹⁾ The 'economically active' are defined (for Census purposes) to exclude such groups as retired people, students and people in various institutions.

1.11. In the remainder of this chapter we shall look in broad outline at the trends in the economy and the population of the region, in the recent past, and as we see them going in the immediate future. The object is to give in a brief space a measure of the problems of the area which regional planning has to tackle. In doing this we shall be drawing very much on the detailed studies of Part II.

Population and the Economy

1.12. The population of North-East Scotland after following a wavering, though generally downward, path in the first half of this century began to trend more decisively downwards in the 1950s. The pace of decline of the total population is still slow, but on the latest evidence shows no signs of slackening. Table 1.2 shows the major outlines of the situation.

TABLE 1.2
Population of North-East Scotland⁽¹⁾
Thousands

1951	Total	468.2
1951/61	{ Natural Increase	28.0
	{ Net Migration	-40.6
1961	Total	455.2
1961/66	{ Natural Increase	13.9
	{ Net Migration	-19.6
1966	Total	449.6

⁽¹⁾ R.G.S.; mid-year estimates

1.13. All measures of migration from the region are very uncertain. But the evidence suggests that at the present time the North East is losing each year, net, about 4,500 people. Perhaps half of these are going to other places in Britain and the rest go overseas. This net outward migration exceeds the rate of natural increase, and as a consequence the total population is declining. This decline in overall size, though slow, will cumulate, and in the end it will have two harmful consequences. First, if sustained over a long enough period, it will impair the economic attractiveness of the area: in an age when the minimum size of economic units is undoubtedly rising it is distinctly unfavourable that the

region's population should be declining. Secondly, as is made clearer later, a continued loss of people by migration, falling as it does on the vital age groups between 20 and 40 years of age, is bound to have detrimental effects on the structure of the population.

1.14. The movements of population are, of course, very closely bound up with the trends in the economic life of the area. The broad pattern of the economy of the North East can be shown by the breakdown of employment by major sectors of the economy and Table 1.3 sets this out, alongside the corresponding figures for Scotland and Great Britain.

1.15. These figures show very clearly the heavy dependence of the North East on the Primary industries of agriculture, forestry and fishing, and the correspondingly low importance of Manufacturing employment. The Service sector, a very miscellaneous group of activities, is rather more important in the North East than in the country as a whole, but not by so much as is usually thought. Two other points that stand out from the analysis of employment by sex are the very heavy bias of the Primary industries towards male employment and the high proportion of women attached to the Service trades. The importance of the Primary sector in the total economy of the region is even greater than these figures suggest, for two reasons. One is that the employment totals used in Table 1.3 take no account of the self-employed and these are particularly prominent in agriculture. Secondly, some employment in the non-Primary sectors is directly connected with one or other of the Primary industries' activities—some transport and some food processing obviously fall into this class.

1.16. All this is brought into significant perspective when we look at the movement of employment by broad sectors in the recent past, and place it alongside such forecasts as our analysis leads us to make for the period of the future over which this survey looks. Table 1.4 brings together this information. Drawing on the conclusions of later chapters, it shows how employment has moved in the main sectors of the

TABLE 1.3
Structure of Employment by Major Sectors: the North East, Scotland and Great Britain, June 1966
per cent of total employment

	North East			Scotland			Great Britain		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Primary:	%	%	%	%	%	%	%	%	%
Agriculture	17.0	2.6	11.7	4.8	1.2	3.5	2.6	1.0	2.0
Forestry	0.3	—	0.2	4.2	0.3	2.7	3.6	0.3	2.5
Fishing	25.7	23.1	25.4	38.4	30.1	34.5	41.0	33.0	38.3
Mining etc.	15.5	1.2	10.3	13.1	1.3	9.1	10.8	1.1	7.2
Manufacturing	40.6	72.9	52.5	39.4	67.1	50.2	41.6	64.6	50.3
Construction									
Services									
Total	100.1	99.8	100.1	99.9	100.0	100.1	100.0	100.2	100.3

Source: D.E.P.

economy of the North East over the years 1961-66; and it brings these into relation with the population changes over the corresponding period. But alongside these figures we place the forecasts for the various sectors, for the period 1966-75, which have been arrived at on the basis of an examination of current and expected trends.

1.17. In any regional economy the two forces of expansion and contraction are normally present. A typical feature of lagging regions is that they contain major industries which are declining in terms of the employment which they offer; at the same time the expanding industries

marked downward drag on the employment provided by the economy of the North East. There were of course some bright spots. Manufacturing employment as a whole, helped by some notable performances, grew at a rate which exceeded the national figure by a clear margin. Construction, a great provider of male jobs, also expanded very rapidly by all comparisons. But in employment terms the growing activities were insufficient to offset the contraction, especially in the vital sphere of male employment. The consequent restriction of job opportunities for men was, and continues to be, a critical factor in the situation of the North East, and one that cannot fail to aggravate the outward flow of migrants.

TABLE 1.4
*Employment and Population Changes in the North East,
1961-66 and 1966-75⁽¹⁾*

	1961-66: Actual changes thousands		1966-75: Forecast changes thousands	
Population: Natural Increase	+13.9		+21 to +25 ⁽²⁾	
Net Migration	-19.8			
Employment: Primary Sector ⁽³⁾	M.	F.	M.	F.
Manufacturing	+4.1	-0.2	-5.1	-0.4
Construction	+1.6	+0.2	+1.7	+1.0
Services ⁽⁴⁾	+2.6	+0.1	-0.5	—
	-0.9	+2.0	+0.4(+1.6)	+1.4(+2.9)
Total ⁽⁵⁾	-0.8	+2.2	-3.5(-2.4)	-2.0(+3.5)
Self employment ⁽⁶⁾ (total)	-5.2		-7.0	
Unemployment (total)	-1.0			
Activity rates ⁽⁷⁾				
Male 1961	85.9%			
1966	82.6%			
Female 1961	30.7%			
1966	36.8%			

⁽¹⁾ Forecasts for 1966-75 are based on the analysis of later chapters. They are to be regarded as very uncertain estimates of possibilities inserted here for purposes of comparison with the 1961-66 figures. No attempt is made here to estimate net migration, activity rates and changes in employment during 1966-75, since there are interacting elements highly dependent on policy changes. This is true also of natural increase of population, but to a lesser extent and a possible range is shown here.

⁽²⁾ These figures are taken from population Projections 4 and 5, Table 7.17, and relate to 1966-76.

⁽³⁾ Full-time employees only.

⁽⁴⁾ Figures in brackets show the upper limits where a range of possibilities has been forecast.

⁽⁵⁾ Census figure for 1961-66, and an extrapolation of this for 1966-75.

⁽⁶⁾ Economically active as a percentage of total population aged 15 and over in each sex category. The female rate for 1961 should be treated with reserve: see para. 8.14.

are not growing sufficiently fast to offset this contraction and to provide employment for the natural increase of the population. Table 1.4 shows this situation at work in the North East. It does so in very global terms which conceal much detail that is examined in later chapters. But for present purposes the broad picture which the figures of this table present is not misleading.

1.18. In North-East Scotland it is the Primary sector which is the major contractionary force. In agriculture the decline in employment—and self-employment—is very rapid, and although the industry has been shedding labour for a long time there is no sign yet of the process coming to a halt.⁽¹⁾ Combined with a slower decline in fishing and with contraction in some Manufacturing industries, the net effect during 1961-66 was a

1.19. From this rather sweeping survey of the past we turn to look forward, with the best indicators that can be mustered, over the period from 1966 to 1975-76. The uncertainties of an exercise of this kind cannot be overemphasized: the figures which we give here are projections, at this point of time, of how the situation in the mid-seventies may look. The means by which these forecasts have been derived are discussed in the relevant chapters of Part II of this Report. We feel that, whatever may transpire to falsify individual figures, the orders of magnitude may not be so very far out; and certainly the scale of the problem which they portray is not misleading.

⁽¹⁾ It must be stressed that there is no evidence of decline in the total output, by value, of North-Eastern agriculture.

As the figures show, there is a problem. The upshot of our projection of future trends is that the decline in the Primary sector of the region will go on, albeit rather more slowly. Manufacturing may continue to expand; Service employment however may expand at a faster rate than in the recent past. The uncertainties in the Service trades are expressed in the range predicted for this sector, but it should be remarked that the lower forecast is preferred. It should also be observed that while this sector is clearly important in the forward position, it is heavily biased towards female employment. Construction which did so much for male employment in the early sixties seems most unlikely to produce much further expansion, in the absence of major increases in public expenditure in the region. Overall, if we look simply at the likely change in men's jobs, and take account of the preponderance of male employment in the declining Primary sector, the employment outlook gives no grounds whatever for optimism. It is unlikely that the job position will be better in 1966-75 than it was in 1961-66; our projections, indeed, point to it being worse. In the case of women's employment there may also be a falling off in the recent expansion.

1.20. There is of course another important variable in the equation of labour supply: self-employment. Between 1961 and 1966 there was a substantial drop in the self-employed, the decrease in the number of farmers accounting for half the decline. This downward trend in the numbers of self-employed is bound to continue, especially in the farm sector; and in doing so, it must inevitably increase the contractionary pressures in the region.

1.21. In 1961-66 a net expansion of employment, made up of a small decline in men's jobs and a substantial increase in women's employment, accompanied a net migration of nearly 20,000 people from the region. There was at the same time some decline in unemployment and a substantial drop in the number of self-employed. There were accompanying changes in activity rates; but the interpretation of these is very uncertain owing to changes in the basis of calculation, and the fact that as far as the decline in the male figure is concerned this has been in line with national trends.

1.22. It seems unlikely that there can be any change in this pattern in 1966-75. Indeed one would expect that, if the forecasts summarized in Table 1.4 are anywhere near the mark, the evolving position will be less favourable. Consequently, in the absence of intensified action to counteract these trends, the outward flow of population will continue, probably at an increased rate.

1.23. There is, of course, an assumption here which must be qualified immediately. The analysis implies that one can reason straight from employment opportunities to migration. This is a simplification. The motives that impel people to migrate, either to other parts of the country or overseas, are multifarious, and one can overstate mere opportunities for employment. For example, one reason for movement

which is frequently overlooked is the income comparison: a region which cannot offer incomes comparable with those to be obtained in other regions will lose people regardless of the availability of jobs. However, giving due weight to the other elements in the migration equation, there is no question that without an adequate number of job opportunities the attempt to retain population in a region like the North East would fail. For the North East the provision of an adequate amount of employment must rest on attracting some new industry to the area; and as we have seen, the urgent need is for male-employing industry.

Objectives for Policy

1.24. What objectives should a policy for the North East set itself? Our terms of reference direct us "to consider how . . . the Government's stated aim of encouraging the expansion of population and industry in Aberdeen and selected centres in the North East can be best achieved". But this is rather general, and we have to consider more specifically what directions policy should take. In *The Scottish Plan* the most explicit statement of policy for the North East prescribes a "holding and consolidation" operation, implicitly in terms of population, with a view to the area playing a fuller part in the absorption of any long-term population increase, sometime after 1975. The White Paper looks forward to developments in Central Scotland building up rapidly between 1970 and 1980. By the end of that decade the Western Borders should be stabilized, Dundee will be "significantly enlarged" and Dumfries "reinforced". Then, according to the *Plan*:

"Future major improvements in communication will permit the exploitation of the more promising areas safeguarded by the earlier holding and consolidation operations—notably in the Aberdeen area and the Beaully and Cromarty Firth area". (para. 244.)

1.25. The objective of 'holding' or 'consolidating', in the North East suggests varying interpretations. It could be taken, for example, to signify the maintenance of a static population: with a relatively high rate of natural increase, as there is in the North East, this would imply a continuing net outflow of people. A more extreme interpretation would take it as meaning the reduction of net outward migration to zero: in this case the area would indeed 'hold' its own natural increase.⁽¹⁾

1.26. The view taken in this survey is that ultimately policy must aim at achieving some population growth in North-East Scotland; but the immediate need is to stem the decline in total numbers. Until this happens the unduly low activity rates in the area will persist, labour will continue to be used in low productivity

⁽¹⁾ This does not, of course, mean that movement would cease—for from it 'Net' migration is the balance of the two streams of inward and outward movements and there is evidence to suggest that reducing it to zero depends as much on increasing the outflow as on decreasing the inflow of people: see Chapter 7, para. 7.11; also Appendix BIII.

occupations, and the structure of the population will continue to be adversely affected, as it is now, by the net loss of members of the younger and more active age groups. The sooner the present downward trend can be arrested the better; but a substantial improvement in net job creation will be needed even for this limited objective. This should be the immediate short-term target for a policy for the North East; it would represent 'consolidation' and should be aimed at for the mid-1970s.

1.27. Once the stabilization of the region's population is assured policy can then turn to the task of increasing it. The precise future trend of the British population is uncertain and the needs of national policy in the future location of population cannot be clearly foreseen. But quite apart from the national position, it would be to the benefit of the North East if some growth in its population could be achieved. For even assuming success in stabilizing population by the mid-seventies, there will almost certainly be fewer people in the North East than in the mid-sixties. As the North East is already a small region, economically speaking, with a comparatively restricted labour force, the further drop in members can only increase this disadvantage. Again, there can be no doubt that a rising population would help to create the kind of expansive economic environment in which the full and efficient use of local labour resources can be achieved.

1.28. In paragraph 1.22 above we concluded that, on the present structure and projected performance of its economy, the employment situation in the North East down to the mid-1970s is unlikely to show any improvement of trend over the early 1960s. If this outlook is to be changed, if the decline in population is to be slowed down and if possible halted, there must be some injection of new activities from outside; and the conclusion to which we are led as a result of all the studies in this survey is that the main hope must lie in attracting new Manufacturing employment from outside of the region. In Chapter 8 an attempt is made to estimate the prospective 'gap' in 1976, between the supply of labour which would be forthcoming from the population of the region, assuming it to be stabilized by that year, and the demand which projected economic trends are likely to generate. The conclusion drawn from this admittedly hazardous exercise, on all the assumptions made there, is that by that year there would be a 'shortage' of about 8,000 jobs. From another point of view this can be regarded as a measure—a very tentative one—of the number of new jobs that must be created in the region as a minimum condition for stabilizing the regional population by the mid-seventies.

1.29. But as we emphasize repeatedly, an estimate of this kind must be regarded as an attempt to put an order of magnitude on the problems, rather than as offering a precise measure of it. Assuming we accept this figure as a provisional target to be kept under continuous review, it does exaggerate somewhat the numbers of new jobs that have to be imported from outside the region, to support the retained population.

Once some population is 'held' by jobs brought in from outside, further jobs are created to provide services, as well as some local manufactures, for the higher numbers of people now living in the area. This effect is usually expressed in the concept of an employment 'multiplier': this is defined as the ratio of total jobs ultimately created to the number initially injected from outside the area, and there is some discussion of it in relation to the North East in Appendix E. As that discussion makes clear the size of a regional multiplier of this kind is very uncertain indeed; present thinking tends to regard it as not very large, perhaps even as low as one and a quarter. A multiplier of this order would mean that for every four new jobs imported into the region, one further job would be created by the consequential demand for local services and goods. Applied to the job 'shortage' estimate of 8,000 it would imply that the importation of about 6,500 new jobs might meet the need. Even this calls for a substantial improvement on the projected performance of the regional economy—of the order of 1,100 new jobs brought into the region in each year from 1971 to 1976—but there are grounds for regarding it as very much a minimum target.⁽¹⁾

1.30. To obtain such an improvement on past trends, the region has three main sources of help. One is the whole group of national policy measures designed to redirect economic activity towards the lagging regions. These measures, which include capital grants and loans under the Local Employment Acts, have recently been greatly strengthened by R.E.P. and by the premium refund of S.E.T. to Manufacturing industry in the Development Areas. There is also the vital negative control over factory building outside the Development Areas in the Industrial Development Certificate system. Some of these measures are too recent for their full effect to be assessed. But all of them, of course, apply equally to all parts of Development Areas; and this means that in regard to these inducements, the North East is competing with other areas for such industry as is, at any time, on the move.

1.31. Secondly, expenditure on infrastructure where there is a major Central Government component—trunk and principal roads and S.S.H.A. housing are examples—may be directed to particular areas where reinforcement of basic services and facilities is necessary. Later we make

⁽¹⁾ The application of the multiplier concept to the North East in period to 1976 is complicated by the fact that, even with an injection of employment of the order postulated in paragraph 1.28, the total population of the region is actually expected to fall. In this situation the multiplier must be interpreted as indicating the number of jobs which would otherwise have been extinguished but which, as a result of the injection of activity, will be retained. Later, however, in Chapter 13, projections of Service sector employment are made on the assumption that the potential decline in the regional population will not greatly affect this employment. This implies that the multiplier effects of an injection of activity have been partly taken into account. Nevertheless, such an injection of new Manufacturing activity would almost certainly create some consequential employment in other sectors, so that one is justified in expecting some multiplier effect, though its size is very uncertain indeed.

some recommendations bearing on particular improvements to infrastructure in the region—recommendations which will require Central Government backing. But one point should be noticed here. In this field of assistance, the Government works to programmes which extend over three to four years in the future. Rapid changes in the order of priorities cannot normally be made; and suggested changes or actions are bound to involve a time lag before implementation is possible. But one other important element of variability in the programmes of central departments should be underlined. This is the provision of advance factories by the Board of Trade. At the moment two of these are under construction in the region, at Elgin and Banff, while a third at Peterhead has recently been let to a manufacturing firm from the south. We attach great importance to this type of action. There is clear evidence that industrialists who are considering moving a plant, or opening a branch, are strongly influenced by the actual availability of premises which are completely serviced and more or less ready for occupation. We shall, therefore, be recommending that the overall planning proposals presented in the next chapter be backed up by the provision of B.O.T. advance factories.

1.32. Finally, among the resources of action available to the region is what it can do for itself. These may be classified into specific actions and general planning policy. By 'general planning policy' we mean the whole group of measures, of a planning kind, designed to increase the attractiveness and potential of the region from an economic and developmental point of view: these form the principal theme of Chapter 3 and no more will be said about them here. Specific action may include measures such as the establishment of local Development Committees and the appointment of Development Officers, the issuing of publicity material, and the

construction of advance factories by local authorities. The last of these actions has been undertaken only by Aberdeen City Corporation. Everything that is said about B.O.T. advance factories applies to similar action by local authorities. In fact, we hope that more will be done on these lines on local as well as on central initiative. The publicizing of the region as an area for the development of new industry certainly does no harm and can be helpful. But it needs to be continuous; it must be thoroughly professional; and it can be expensive. It is possible that there is more to be gained by purely personal approaches to industrialists who may be considering moving, either by existing local officials, or by a Development Officer when he is appointed. (Incidentally, the more effective tourist publicity which we recommend later will undoubtedly help the presentation of the region for industrial development purposes.) The recently established North-East Development Committee is a useful initiative for providing a Development Officer responsible for more than a single local authority area,⁽¹⁾ and for organizing the kind of local support that he needs if his work is to be effective. Unfortunately the Committee, as at present constituted, covers only three authorities in our area—Aberdeen City, Aberdeen County and Kincardineshire—and a more comprehensive body is needed to cover the whole North East. We do not however favour the establishment of a statutory Development Board on the lines of the Highland and Islands Development Board. The position of the North East does not warrant this sort of measure: the problems of the region are different in scale and character from those of the crofting counties. Properly directed and co-ordinated, there is sufficient local initiative to achieve all that it is possible for local efforts to do.

⁽¹⁾ The County of Banff has had its own Development Officer for some years.

Aberdeen City

2.1. A recurrent theme in this Report is the size and position of Aberdeen City within the North East. Forty-one per cent of the region's population live within the City's boundaries, and if we include with it the suburban areas immediately surrounding it, the proportion rises to 44%. This dominating position of the City alone would justify devoting a chapter of this Report to it; but there are other, weighty reasons connected with the whole planning strategy for the region which demand it. Before examining these, some description of the City's economy, functions and suitability for development is called for.

The Economy of the City

2.2. The structure of Aberdeen's economy, as shown by its labour force has one or two unusual features worth commenting on. Broadly, one may summarise it in these terms. Aberdeen has a comparatively low dependence on Manufacturing industry, although a higher proportion of its labour force is engaged in these activities than in the North East as a whole. The City makes up for this in part by Primary activities. Within the City's boundaries themselves, fishing is an obvious cause of this; but the Aberdeen Employment Exchange area, to which our figures relate, extends a considerable way up the Don Valley, and the numbers employed in agriculture and horticulture are actually greater than fishing. Services are also an important foundation of the City's economy, though for a city the proportion of people engaged in such activities is not out of the way.

2.3. If one looks in closer detail at the sectors, the more distinctive features of the economy appear. Within Manufacturing there is a very wide spread of activities, with few of them, at the level of 'minimum list headings' of the S.I.C., accounting for more than 2% of total employment. In fact the only two that do are Bacon, meat and fish processing and Paper and board manufactures. If we take the broader 'industry groups' then Textiles and Shipbuilding and marine engineering also come into this class. It is worth noting that an orientation towards traditional type activities like paper and textiles is sometimes deceptive in that the firms concerned may be using highly non-traditional materials, like synthetic fibres, or are geared to new products, such as board packaging. And a

further point: if one puts together all the activities which fall into the broad group of engineering and metal working—including, for example, Shipbuilding and repairing, and Mechanical handling equipment—a male labour force of over four thousand is involved.

TABLE 2.1
*Aberdeen Employment Exchange Area
Employees (including unemployed),
June 1966*

	No. thousands	Per cent of total
<i>Primary Industries, (1) Total:</i>	<i>5.8</i>	<i>6.1</i>
Agriculture and horticulture	3.2	3.4
Fishing	2.2	2.4
<i>Manufacturing, Total:</i>	<i>26.1</i>	<i>27.5</i>
Bacon, meat, fish processing	5.1	5.4
Paper and board	3.3	3.5
Textiles	3.0	3.1
Shipbuilding and marine engineering	2.0	2.2
Construction	9.8	10.3
<i>Services, Total, (2)</i>	<i>53.4</i>	<i>56.2</i>
Transport (all)	6.4	6.7
Retail distribution	10.8	11.4
Educational services	7.3	7.7
Medical and dental	6.4	6.7
Catering, hotels etc.	2.9	3.1
Motor repairs etc.	2.3	2.4
Local government	2.8	2.9
<i>Grand total</i>	<i>85.1</i>	<i>100.1</i>

(1) Including mining, quarrying etc.

(2) Including a small number (140) of unclassified employees.

Source: D.E.P.

2.4. Within the North East Aberdeen functions as the major service centre of the region. In some measure almost the whole area covered by this survey looks to the City for elements of commercial and financial services—shopping, wholesale distribution, insurance and finance—and for other important services like education, medical treatment, administration and entertainment. Expectably, the degree and character of this dependence varies between different parts of the region. The more distant areas, particularly in the north, make use of only some of the City's

services: the importance of Elgin as the second service centre of the region is evidence of one limit on the range of Aberdeen's commercial influence. But even Moray people go to Aberdeen at intervals for shopping purposes and entertainment; while they depend more continuously on its higher educational institutions, its hospitals, some of its administrative functions, and—in the commercial field—its wholesale distributive and financial services. For the immediate zone around the City—perhaps to a depth of 15 to 20 miles—it is the major shopping centre for all but day-to-day requirements. But it also houses the branches of national organizations, for example, in insurance and finance, and these tend to serve most of our survey region.

2.5. The Service function of Aberdeen, taking in all the activities normally included under this heading, is of major significance for the regional economy in several ways. To begin with it is an inestimable advantage to the whole region to have a centre of this scope and character servicing it: its presence, with all the facilities which it offers, adds appreciably to the attractiveness of the area as a whole. But the advantages go beyond this. Some of the Service activities are, or could be, of strategic importance to the development of the whole North East. This is particularly so with the University, Robert Gordon's Institute of Technology, the other institutions of higher education, and the important research institutes. Together, these form an impressive structure of education and expertise, able through the production of graduates and other trained manpower, and the important provision of consultative services, to assure a technical and intellectual milieu which could be highly attractive to some of the science-based industries.

2.6. Another aspect of Aberdeen, of the greatest significance, is the labour force which it provides. In June 1966 the number of employees (including the unemployed) within the Aberdeen Employment Exchange area was 93,100, or 61 % of the total for the survey area. This total includes workers travelling in from burghs such as Inverurie and Stonehaven and excludes people who travel out daily to work in places falling within other exchange areas. The range over which people are prepared to move to their work is increasing. In North-East Scotland, generally, such distances are still rather short, and there are strong reasons for doing everything possible to extend them. Not that the journey-to-work is in itself a good thing—rather the contrary; but, where numbers are not large, a greater willingness to travel increases the range of job opportunities for workers, while at the same time extending the labour supply upon which any given employer can draw. Even though the Aberdeen City region forms the largest local labour market in the region, it could still benefit from a wider pattern of travel-to-work. As we have seen the City and its immediate suburban fringe contains some 210,000 people; but if we take a more extensive area, reaching out to the burghs of Stonehaven, Banchory, Inverurie and Ellon, as well as the intervening rural settlements, we enclose a population of a quarter of a million. With appropriate

planning measures to encourage and facilitate movement this area could afford an even larger and more effective labour force than it does at present.

2.7. The structure of the labour force within the City region invites some comment. The general under-representation of Manufacturing in the region as a whole extends, as we have seen, to the City; but there is an appreciable number of people in such skilled manual occupations as the engineering and metal trades. Furthermore, there is some evidence that these skilled categories of labour are comparatively prominent among the migrants of the area. In another range of occupations, it is clear that the City contains a substantial supply of administrative and clerical labour which, coupled with the facilities for commercial education, provides a basis for some expansion of office employment, although the geographical position of the City appears to diminish the advantage of this particular line of development.

2.8. Reference to the position of Aberdeen calls for some comment on its communications. There is no question that the peripheral situation of the City is considerably mitigated by the standard of its communications, personal and otherwise. In many respects these are comparable with other locations both in Scotland and in the north of England. The passenger services from the City, by train and air, are good; indeed the daily air connections with London, Edinburgh and Glasgow give it a definite edge over many, more centrally situated, places. Movement of goods now has the considerable, developing advantage of the liner train service. Finally, and not least among the advantages offered by the City, there are the very substantial amenities of the Aberdeen City region. A clean and attractive City, well provided with services of all kinds, as yet noticeably less affected by urban congestion than elsewhere, and with a magnificent hinterland of valley and upland country reaching to the very boundaries of the City—all these are features which are far from unimportant in determining the attractiveness of an area for incoming industry, and which should be exploited to the full.

2.9. We have remarked that the dominance of Aberdeen within the North East has disadvantages for some parts of the area. The greater opportunities and wider facilities which flow from the advantages that we have been listing, are an attraction for people in the adjacent counties; and this is leading to greater concentration around the City. The authorities of the neighbouring counties are under constant pressure to locate new development within the suburban fringe of Aberdeen. And up to a point, this movement is self-intensifying: a rising population in the City region in itself creates employment opportunities, as it also increases the attractiveness of the City for incoming industry.

2.10. This movement can be represented as undesirable, as in a sense 'draining the life' out of many old communities which would otherwise continue to flourish as before. This is a false view of the matter. Whatever one feels about the consequences of the decline of small towns and

villages—of the 'drift' from the countryside—it is a widely occurring feature of modern life, by no means confined to North-East Scotland, and associated with significant and irreversible changes in agriculture and other rural activities. Aberdeen City should not be regarded as growing 'at the expense' of the rural North East; rather it is the existence of Aberdeen that offers the chance of retaining within the area some of the population which might otherwise leave the North East altogether.

2.11. Everything that we have said here on the subject of the City underlines its importance as the major growth point within the North East in the foreseeable future. We see the City as capable of further growth and development, as offering the most attractive location for many types of industry that might be drawn to the area, and as continuing in its present function of a service centre to the region as a whole. But this anticipates our ultimate conclusions, and at this point we should say something about the physical planning situation in and around the City.

Planning Problems of Aberdeen City

2.12. The City region of Aberdeen presents a problem of urban planning which, within the North East is unique in scale and character. It is necessary to look at it in some detail because of the importance which we attach to Aberdeen City as a major location of future growth within the North East. Such growth, if realized, will increase urban development within the City region. It therefore demands careful consideration, first simply on urban planning grounds, to produce the most livable and efficient environment in the City region; but secondly, and most importantly, on regional planning grounds, to promote the aims of stimulating economic growth in the area as a whole. We shall argue that planning can do this by positively enhancing the attractiveness of the North East to incoming firms.

2.13. Aberdeen City is in the position, currently met by all towns and cities, of wishing to extend its area of housing and industry but having very little land to do it on within its existing boundaries. By 1970 the City will have used up all available undeveloped land, and indeed the land available for private development will be exhausted before that date. Once the undeveloped land is built up, and filling a boundary change, further housing and industrial development within the present City limits will depend on the use of gap sites, upon the redevelopment of land now given over to other uses, and on the possible redevelopment of some existing housing areas at higher densities.⁽¹⁾

2.14. The difficulties created by this situation would, of course, become more acute should it become necessary to house an increasing population within the present boundaries. But the problem is unlikely to present itself in quite this form since the pressure of demand can be relieved by people moving outside the City boundaries, or even outside the region altogether. If it remains impossible to increase the supply of accommodation within the City an overspill situation will be created; indeed it already exists since a voluntary movement of this kind is now going on. Nevertheless, even though the numbers living within the City do not rise, and may in fact decline as they are now doing, pressure on the available accommodation will be there and it will be significantly increased from two other causes: the redevelopment and rehabilitation of sub-standard houses, and the trend to lower occupancy rates.

2.15. The City, in spite of the generally pleasing aspect of the granite in which it is built, has its share of dwellings that are deficient in necessary amenities like bathrooms and individual indoor lavatories. It is difficult to put a precise figure on these dwellings, since a comprehensive physical survey has yet to be made; but a recent estimate, applying a high standard, put the figure of sub-standard houses at 17,700 or 29% of the total housing stock. Some of these houses are capable of further useful life: they are structurally sound and their rehabilitation is a part of housing policy. But, inevitably, the process of improving them causes some loss of accommodation; the figure of 25% has been suggested for this. Where houses have to be demolished and the sites redeveloped there is usually a bigger loss of actual dwelling units in that modern standards of town planning demand lower densities of population than we have at present. Thus rehabilitation and redevelopment, once started on a large scale, will create a demand for further accommodation simply to house the families displaced from the areas concerned. The amount of such demand will depend on the rate of redevelopment and to this we shall return.

2.16. In some senses redevelopment has already put pressure on housing supply. There has been a considerable demolition of old property in some parts of the City. There have also been substantial clearances and replacements of the post-war generation of pre-fabricated houses. In recent years this has taken place on an appreciable scale, and the result has been a remarkably high loss of dwellings which has offset—in terms of supply of accommodation—a large fraction of the new houses built. This can be seen in Table 2.2 which compares the numbers of houses built during 1951-66 with the actual increase in occupied dwellings.

2.17. Another significant group of pressures on the supply of houses manifest themselves in the trend to lower 'occupancy rates' which has been going on, in Aberdeen and elsewhere, for some years. Changes in the age structure of the population, lower marriage ages and rising real incomes have all combined to accelerate the rate of formation of new households; this has increased

⁽¹⁾ In November 1968 Aberdeen Corporation published a Provisional Order seeking an extension of the City boundaries in the Aulness and Sheddockalee areas. At the time of writing this Order awaits confirmation by Parliament which, depending on whether or not it is opposed, will take some months. Should the Order be confirmed urban development of the areas in question would still be subject to the consent of the Secretary of State. In the present chapter, and in subsequent chapters, all discussion of the planning situation and problems in Aberdeen City relates to the area within the City boundaries as defined in 1968.

TABLE 2.2
*Aberdeen City: Houses Built and Increase in
Occupied Dwellings, 1951-66*

	1951-60	1961-66
<i>Houses built:</i>		
Local Authority	8,429	3,970
Private	1,549	1,467
Other (mainly S.S.H.A.)	1,404	2
Total	11,382	5,439
<i>Actual increase in occupied dwellings</i>	7,823	1,721

Source: Scottish Housing Returns

the number of potentially separate households and—given housing and rent policies—boosted the demand for separate dwellings. As many of these new households are inevitably smaller in size than the average, the effect is to decrease the average number of occupants per dwelling. Thus in Aberdeen City between 1961 and 1966, the size of the average household fell from 3.04 to 2.92 persons, and there was an accompanying fall in the occupancy rate from 3.05 to 2.95. This decline meant that the 1966 stock of dwellings would have accommodated 5,700 more people than it did, if the 1961 occupancy rate had still applied; or, to put it another way, and abstracting from other changes, some 1,900 more dwellings would have been needed in 1967 simply to house the 1961 population. Furthermore, if the underlying trends which are depressing the occupancy rate continues to operate, the number of people 'displaced' in this way between 1966 and 1976 would be in the region of 13,000. As the occupancy rate in Aberdeen is high compared with, say, Edinburgh, such a trend is far from unlikely.

2.18. As we have already remarked the rehousing of population displaced either by re-

TABLE 2.3
*Aberdeen City and Suburbs:
Population 1951-66⁽¹⁾*

	1951	1961	1966
<i>Aberdeen City</i>	182,729	185,350	184,070
<i>Suburban Parishes:</i>			
Old Machar	2,714	2,946	3,870
Newhall	6,634	7,413	7,810
Peterculter	6,734	7,742	8,323
Maryculter	927	818	820
Banchory-Devenick	1,380	1,264	1,170
Nigg	1,649	935	1,140
	19,438	21,118	23,730

⁽¹⁾ The 1966 Census tabulations do not show population by parishes. The figures given here are compiled from enumeration district totals and approximate as nearly as possible to the parish boundaries. Also, the Census was a 1 in 10 sample and the final zero has been added to each figure: it does not indicate that the totals are correct to the nearest ten.

Source: Censuses 1951 and 1961, Sample Census 1966.

development or by lower rates of occupancy will come about in part by a process of voluntary overspill. People are moving out from the City all the time, to live in the suburban areas within the two neighbouring counties. In Table 2.3 an attempt has been made to show the changes of population in a constant area corresponding as nearly as possible to the City and its suburban fringe between 1951 and 1966.

2.19. Between 1961 and 1966, while the population of the City fell, that of 'Greater Aberdeen' rose. The two movements were partly related in that former inhabitants of the City moved into the suburban areas. But the suburban areas were also receiving people from the rural areas of the counties; while part of the drop in the City's population was almost certainly accounted for by people migrating from the region altogether.

2.20. The population of Aberdeen City within its present (i.e., 1968) boundaries will almost certainly continue to fall since such building of new houses as may continue will not offset the trend to lower densities within the urban areas. The significance of the present shortage of land within the City is that after 1970 an *acute* overspill problem will arise in relation to the *present* boundaries of the City. The numbers who will have to be rehoused outside these boundaries could be considerable. A report by the City's Director of Town Planning, completed in 1965, estimated that if redevelopment and rehabilitation were to be stepped up to deal with 500 houses a year, some 11,000 people could be displaced during the twenty years 1964-85. This figure was arrived at on the basis of explicitly arbitrary (though not unrealistic) assumptions about resulting densities of redevelopment. It also took some account of falling occupancy rates, although it did not apply them to the whole housing stock of the City. However, as we have remarked, occupancy rates in themselves are the product of several trends which determine the rate of the formation of new households, and of the level of income. The future paths of these trends are hard to predict, nor are they all independent factors in the situation. It is possible, however, that some of the important determining factors may persist during the next decade with almost as much force as in the recent past. For example, changes in the structure of population (especially the rise in numbers in the 15-30 age group), the trend to earlier marriages, and the rise in real incomes, all seem likely to maintain their impetus. Finally, migration itself is a variable in this situation: the pressure on housing depends partly on the rate of migration. In arriving at an estimate of the likely displacement from all the factors considered we have assumed that outward migration from the region as a whole, though continuing, is unlikely to affect the demand for housing in and around Aberdeen City during the survey period.

2.21. Estimates of the potential displacement of population from the City as a result of the fall in average size of households, and of redevelopment, during the period 1966-76, are given in Table 2.4. The displacement due to the fall in average household size is calculated from the 1966 population on the conservative assumption

that this size continues to decline at one half the rate of 1961-66, to reach 2.80 in 1976. This average was applied to the population living in private households in 1966 and from this was calculated the potential increase in the number of separate households due to this factor, and the number of people involved.⁽¹⁾ The displacement due to redevelopment was calculated on the assumption that redevelopment and rehabilitation would start in 1970 at a rate of 500 houses per year, using loss-of-space factors assumed by the City planners. One final assumption which underlies this calculation is that all separate households will wish to occupy separate dwellings.

TABLE 2.4
*Aberdeen City: Possible Displacement
of Population, 1966-76*

Due to falling household size	7,200
Due to redevelopment etc.	3,700
	<hr/> 10,900

2.22. It should be said that some further development within the City's boundaries will be possible after 1970, on gap sites. The above figures do indicate however that if the present momentum of housing development by—or for—the City is to be maintained, a problem of organized overspill will be faced shortly after 1970, defining 'overspill' here as any development which takes population at present housed within the City and establishes it in dwellings outside the *present* boundaries. Of course, the 'displacement' figure in Table 2.4 does not necessarily indicate the full extent of the potential demand for new housing emanating from the City's present population. In December 1967 the

City had a waiting list for municipal houses of 5,300 people (with a further 1,500 waiting to be added to the list). In recent years it has been building houses at the rate of 1,200-1,500 per year; taking a rough occupancy rate of 3, this means that it has been rehousing people at the rate of about 4,000 a year. Under present housing and rent policies it is possible that the demand for municipal housing alone may exceed by a considerable margin the projection of Table 2.4. This would lead to a faster decline in the number of people living within the present boundaries of the City, and would also probably release land at present under housing for other purposes.

2.23. Whatever the rate at which the rehousing of the City's population proceeds, it is clear that 'overspill' as defined here, will be a major developmental factor in the fringe areas. More than this, it will be a major factor in the development of the region as a whole. Just how it will be met, whether it will be tackled within an enlarged City of Aberdeen, or through agreement with adjoining authorities, or whether indeed some entirely different solution conducted under an administrative structure not at present in existence—all this is uncertain. The Report and recommendations of the Royal Commission on Local Government in Scotland may be a decisive influence here. But one conclusion is inescapable: there is a pressing need to think and plan at the very least in terms of an Aberdeen City region. The boundaries between the City and the counties of Kincardine and Aberdeen have become obsolete for planning purposes; an arrangement whereby three separate planning authorities are responsible for the development of the area in and around Aberdeen City must inevitably obstruct a rational solution to the development needs of the whole area. But we would go further than this and argue that the future growth of Aberdeen City and its immediate hinterland should be planned with a view to promoting the economic development of the North East as a whole. To this wider problem of regional planning we now turn.

⁽¹⁾ For a fuller description of this calculation see Appendix A, p. 145. The assumption of a constant population, as the base of this calculation, may be justified on a number of grounds which are referred to in this Appendix.

Regional Planning Aims and Options

3.1. The immediate aim for regional policy in the North East should be to halt the downward movement in population, and it should aim to do this by the mid-seventies. The forecasts we have made of employment trends in the region's indigenous industries, down to the mid-1970s, offer no likely prospect of a retardation, let alone reversal, of this trend. And while there is no simple, invariant link between jobs and population, an expansion of employment is clearly a necessary condition of an improvement in the population trend. We think that such expansion will require the attraction of new economic activities from outside the region, and that these must largely be in the Manufacturing sector.

3.2. How is the industrial development necessary to provide this employment to be attracted to the North East? The region is, of course, part of a development area. It enjoys all the special inducements attached to this status—building grants and loans, differential investment grants, R.E.P. and the refund of S.E.T. at its premium rate. It is also a potential beneficiary of the control over the location of industrial development exerted through the Industrial Development Certificate. But, of course, it enjoys these advantages in common with all other development areas, and is in competition—frequently intense competition—with them for the amount of mobile industry which is going. Thus if we assume, as we must, the continuance of the present industrial steering policy the attraction of new industry to the North East depends to a very large extent on the efforts which the authorities of the area are themselves prepared to put forth. Above all it depends, and will increasingly depend, on the success of local initiative in creating an environment within the region which is attractive to the potential incoming firm.

3.3. There are, of course, some factors essential to the economic viability of the region, which fall largely outside its own control. Communications are an obvious and major example here: it is vital to the North East that its links, by roads, rail and air, with the rest of the country are maintained and improved as rapidly as resources permit. It is unquestionable, also, that local initiative—especially where the provision of housing and other infrastructure is concerned—is heavily dependent on Central Government co-operation and finance. But within the limits set

by such constraints there is much that local action can do, through appropriate planning strategies, to create conditions conducive to economic growth.

3.4. A major set of facts which, in our opinion, should be a dominant consideration in regional planning in the North East, is the size and distribution of the region's population, and their implications for the labour force. It is an inherent disadvantage of an area of comparatively small and, in places, sparse population that the size of the labour force, both overall, and at any given point, is limited. Furthermore, it is a consequence of this position that the supplies of individual categories of labour are even more limited. This aspect of the regional economy is unquestionably a major deterrent to firms which might otherwise consider a North-Eastern location for new plants. It is therefore vital that regional planning action should aim to maximize the supply of labour at those points selected for major development. This is a question of extending the range and efficiency of local labour markets. But the places themselves must offer prospects of mobilizing a labour force which, in the North-Eastern context, is as large as possible.

3.5. Besides labour supply, other important factors in planning strategy are the services offered at specific points and the level of amenities which they afford. These two factors are not, of course, entirely distinct. Services, narrowly defined as, for example, commercial and financial facilities, are important. But they merge into amenities when one brings in such things as the level of shopping facilities, the quality and variety of educational resources and the possibilities for recreational activities of all kinds. It is indisputable that incoming firms attach great importance to these considerations when determining new locations for their activities, since they affect the willingness of managers and other staff, who frequently have to be brought in, to serve in any particular place. As such migrants into the region are of strategic significance to the increased employment of local people it is important that regional development should take account of their likely preference in choices of location.⁽¹⁾

⁽¹⁾ More is said on this in the context of migration trends in Appendix B.

Planning Strategy

3.6. One important conclusion to which all our findings point is that the right planning strategy for the region will be one which combines into a single policy what are frequently approached as two separate activities of development. These are *economic planning*, in the narrower sense of actions directed to influencing the location of industry, and *urban and housing development*.

3.7. Problems of urban and housing development may arise from conditions quite unconnected with other aspects of development. For example, the needs imposed by obsolescence and urban renewal spring from a variety of social and historical circumstances. But there is a point beyond which housing renewal and urban redevelopment must be placed squarely in the context of regional development. This is imposed by the needs of industrial steering policy. Where new industry is being promoted there must frequently be an accompanying development of housing. This is not an invariable necessity: if the incoming industry is merely offsetting a decline in other activities, and if there is no need to relocate population, there may be no need to build new houses on this account. But this is not the case in North-East Scotland. It is true that, for the immediate future, all efforts will be required merely to offset decline in major traditional industries; and, looked at regionally, the total number of people who have to be housed will probably continue to decline up to the mid-seventies. But a sizeable redistribution of people, both occupational and spatial, will be involved. People will move from existing jobs to new ones, or enter occupations new to the region. To a large extent the new jobs cannot be located near their old homes, simply because so many of these are scattered around the countryside and the coast.

3.8. For this reason alone new housing development may have to be associated closely with industrial development. But there is another strong reason for doing this. There is evidence that in deciding the location of new units, industrialists attach a good deal of weight to the presence of substantial housing developments within moderate distances of the plant locations. They are aware, of course, that people are prepared to travel to work, and are doing so over increasing distances; so that the labour for a given factory will not be drawn entirely from the immediate vicinity. But the presence of people living near at hand gives what *The Scottish Plan* called "evidence of a predictable formation of labour at key points". New housing on a significant scale also gives tangible evidence of the support and encouragement of local authorities to the development of the area, and this too carries weight with incoming firms.

3.9. We shall argue shortly that the appropriate economic strategy for the region demands a high degree of concentration of development in the areas selected for economic development. This concentration embraces new housing.

Furthermore, it applies as much to housing development in the Aberdeen City region as elsewhere: the new housing which will result from the City's policy of redeveloping or improving its housing stock should be as subject as any other to the overall strategy for the region. It is now time to consider this in terms of the pattern of existing population in the North East.

The Need for Concentration

3.10. If we look at the region from a regional planning point of view certain features stand out. One is the long communications axis which enters the region at its southern and south-eastern extremities and, after passing through Aberdeen, swings north-westerly to Elgin and thence to Inverness. This axis includes both the rail and major road links, though south of Stonehaven there are in effect two main roads, the A.92 and the A.94, running parallel at some distance apart. A second, quite different feature is the large number of small centres of population, most of them with less than 2,000 of a population, and only six with more than 5,000. A high proportion of these settlements—indeed, half of the burghs—lie on the coast, away from the communications axis.

3.11. The problem posed by such a large number of existing settlements is implied, if not stated outright, in *The Scottish Plan*. For, quite apart from the important social influences which are causing population to drift from smaller to larger centres, the sheer number and dispersal of the small towns in the North East make it difficult in modern conditions to provide the basis for an expanding economy in them all: some concentration of planning effort is inevitable. Looking outside Aberdeen City the White Paper suggested a number of centres which, the authors considered, were "the most promising places on which to concentrate". These were Elgin, Buckie, Keith, Huntly, Banff-Macduff, Fraserburgh and Peterhead. In terms of the strategy outlined in that document, it was envisaged that in these places a "more systematic development of industry would be matched with the planned forward provision of housing", and one might characterize this as a 'growth point' approach to the economic development of the North East. It is considered here that this approach has two principal shortcomings: that as a pattern of development it is too fragmented, and that the list of 'growth points' is still too long.

3.12. The intention in the White Paper seems to be that each place selected for concentrated development would draw on its own rural hinterland for labour: in that sense it would serve a wider area than itself. This goes some way to meeting the overriding need of the North East, which is to extend the size of local labour markets. But the labour catchments envisaged would still be, individually, rather restricted, and the view here is that the situation in the North East calls for a regional planning approach based on groups of communities rather than individual

places. Through its choice of locations for industry, housing and other infrastructure, planning should aim to promote the linking together of places in development, with the object of encouraging greater movement of labour between them. The development of the North East might be planned around a number of such groupings: Fraserburgh - Peterhead and their surrounding villages; Banff-Macduff, together with Turriff; Aberchirder, Cullen and Portsoy; Elgin and its surrounding burghs extending as far as Buckie—all these would make population and labour supply areas which would be much more viable than any single place on its own. Together with Aberdeen City and the burghs lying in its immediate hinterland—Stonhaven, Banchory, Inverurie, Ellon—they offer a structure of four groupings, 'growth zones', around which development could be planned.

3.13. If there were sufficient new industrial development coming forward in the North East one could aim to reinforce the economy of each of these groupings. All could sustain some infusion of light industry and this would form the basis of a 'holding' policy. But it is clear that new industrial development on this scale is unlikely to come readily to the region. Whatever the claims and attractions of the individual towns, and in spite of the vigour which they are demonstrably prepared to put into their own development, it is clear that to try to promote four growth zones in the North East, at this point of time, would run the risk of dispersing efforts too widely, and of achieving less than a greater degree of concentration would bring.

3.14. Given the difficulties facing the region, and in view of the limited amount of mobile industry and the intense inter-regional competition for it, there is a clear need to concentrate planning efforts to achieve the maximum impact on the attractiveness of the region for potential incoming industry. This means selecting those areas which offer the most favourable economic and planning factors coupled with the potential for further development in the future. It hardly needs saying that on these criteria the most promising area by far is Aberdeen City and its surrounding region. We have already made it clear that we think that this should form the major zone of concentrated development within the North East; and that in the period immediately ahead it should claim the preponderance of regional planning effort. However, for reasons which we shall shortly give, we think there is a case for establishing a second, minor growth zone centred on Elgin and embracing such burghs as Forres, Lossiemouth, Buckie, Keith and the village of Fochabers. Taking both zones together, the aim should be over the next decade to locate in them as much as possible of the new housing development in the region, together with necessary infrastructure, with the object of making them as attractive as possible to potential incoming industry. To the extent that these efforts, with the assistance of present regional inducements, are successful, these areas will hold population in the region.

The Physical Pattern of Development

3.15. We have stressed that Government policy as at present determined, cannot exert detailed locational control over mobile industry, and that very much therefore depends on the intrinsic attractions which an area can exert for industrialists on the move. We have argued that one of the strongest grounds for concentration of effort is that by establishing a sizeable development in place of a number of scattered efforts, it gives the evidence that industrialists often require of the presence of a population from which labour can be drawn. But it might appear that there is a hiatus in the timing of the action we recommend, that until new industry is attracted to the region the basis for an expanded population will not be present. This, however, ignores the fact that there is ample basis in most parts of the region for extending the development of housing, to take population which is relocating itself because of structural change in the industry of the area, because of increasing numbers of households, and because of necessary housing renewal. These trends can be used to provide the initial basis for the areas of concentration; but they should also be accompanied by the establishment of fully serviced industrial sites, and with the construction of advance factories. We now look more closely at each of the areas of concentration, to give our reasons for selecting them, and to define the physical pattern of development which we recommend for them.

The Aberdeen City Region

3.16. There can be no doubt as to the primacy of Aberdeen and its surrounding region in planning the regional development of the North East: the size of its population and labour force, its services, commercial and public, and the level of its amenity, make it the most attractive centre for industry in the North East. As we have seen earlier, there is bound to be a considerable housing development in the immediate future, simply to deal with the problems and needs of the City. The planning of this already demands urgent consideration. We recommend that the solution determined on should take account of the development and planning needs of the whole City region.

3.17. One possible pattern of future development is that the City's problems should be tackled, as in the past, simply by concentric growth, with the built-up area pushing outwards within an extending City boundary. Such a development would encroach on the present green belt, but this is not in itself a serious criticism. The compactness of Aberdeen, the large open spaces within easy access of it, the extent of the foreseeable development—these facts diminish considerably the importance of defending the particular tract of open country that happens, at the moment, to encircle the City. From the City's point of view this pattern of development has the advantage that under the present structure of local government it would be carried out under its own control and jurisdiction. A major dis-

advantage from a physical planning point of view is that it would in the end intensify the problem of handling the ever-growing traffic volume because of the pattern of convergence of flow which this type of development necessarily imposes. Furthermore it is arguable that it would interfere with the functioning of Aberdeen as a regional centre in that it would impose an increasing load of 'lower level', day-to-day servicing functions on the central areas of the City.

3.18. An alternative to concentric growth would be the development of some, or perhaps all, of the satellite burghs which run in a semi-circle from Stonehaven, through Banchory and Inverurie, to Ellon. Under this plan, development within the Aberdeen City boundaries would be contained, and limited to redevelopment and rehabilitation. The inevitable overspill of the City's population, plus the population drawn from elsewhere in the region which, it is hoped, would be held within the area, would be located in the satellites which would be expanded in size for the purpose. The zoning of land for industry and the possible construction of advance factories would be used to inject an industrial component. At the same time it would be an essential part of this, as of any strategy for the North East, that there would be an increased interchange of people between the burghs and the City for work purposes. There is already an established pattern of travel-to-work, though not on a large scale; a quicker pace of development in the satellites would increase this movement and so tend to extend further the labour market of the City region. Apart from this important gain, the advantage of this pattern of development is that it would make use of settlements which are already established, with all necessary local services and with an established local community life. By building on these places, their continued life would be assured, and some of them could form the nucleus of more extended development in the future.

3.19. But the choice of burghs for this purpose requires some discrimination. Too great a dispersal, even within this relatively restricted region, could sacrifice some of the effects of concentration, as well as dissipating possible economies of scale in infrastructural development. For this reason it seems that the desirable pattern of development would be one that involves concentrated growth along one or other of the major routeways radiating from the City.

3.20. To some extent this pattern has already established itself. The residential development along the North Donside Road is an example. The increasing limitation of space along this routeway, as well as the high amenities of the whole of this valley, seem to us to rule out this area for any future development which includes a major industrial component. At the same time we consider it only realistic to recognise that some private development will continue along this radius, and that it is desirable that it should do so. Banchory, in particular, must increasingly be drawn into the travel-to-work sphere of Aber-

deen, and we think that further growth of this burgh on these lines should be planned for.

3.21. Another possibility is the northerly section of the A.92, from Aberdeen to Ellon. This routeway has the disadvantage that it contains no existing settlements of any size between the Bridge of Don and Ellon; but the most significant objection is the climatic factor. This coast suffers from exposure to sea winds, which makes it unsuitable for extensive residential development.

3.22. This leaves two major routeways which seem to us to be the effective candidates for a linear development of the kind we are proposing. These are the line of the A.92, southwards from Aberdeen to Stonehaven; and the Don Valley from the City boundary to Inverurie. Both these radii have advantages. In the case of the Aberdeen-Stonehaven route there is the presence of the main road to the south, a road which is already partially dual carriageway, and which is scheduled to be completely dualled within a few years. Against this location is the fact that there are no existing, sizeable settlements before Stonehaven is reached. Also, the terrain along this road is bleak and exposed, and in places presents difficulties for development because of the nearness to the surface of the underlying rock. There is the further fact that, useful though the A.92 is, its primary purpose is as a trunk route from Aberdeen and the region southwards; to impose a growing volume of suburban traffic on it would to some extent impede this function. However regardless of whether or not this stretch of country is selected for major development, some residential development at Stonehaven and at least one intervening point on the coast is inevitable and must, sensibly, be allowed for.

3.23. The alternative to the Aberdeen-Stonehaven radius is the Don Valley. This offers a number of advantages which are lacking in the others. It is, for example, not subject to the climatic disadvantages of either of the coastal locations. Also it contains some established settlements in Dyce, Kintore and Inverurie, together with other reasonably closely related village settlements such as Kemnay and Oldmeldrum. The larger of these, and particularly Inverurie, are capable of forming the nuclei of expanded settlements. Again, the Don Valley combines the advantages of containing the two transport modes, road and rail, while enjoying very ready access to the Dyce airport. Finally, it cannot be overlooked, that compared with the southerly radius, it would extend the development of the Aberdeen City region in a northerly direction where it is likely to be of most assistance, in terms of related development, to such places as Peterhead and Huntly, and indeed, to the whole of the central and north-eastern corner of the region. The Don Valley has the disadvantage in the short term that the A.96 road itself is becoming increasingly inadequate as a route into Aberdeen, and as a major artery of traffic. As a consequence, development along this artery would inevitably involve accelerated expenditure on road works—though no more than will in the end be necessary.

3.24. For all these reasons we have, in seeking the assistance of the Scottish Development Department in a feasibility study, concentrated major attention upon the linear development of the Don Valley. We recognize, however, that our resources have not permitted us fully to cost the implications of this line and we recommend that before a final decision is taken on this matter, a study in greater depth of this option be made. But in spite of this small margin of uncertainty, we remain convinced of the necessity of planning for a major concentration of development in the Aberdeen City region.

The Moray-Banffshire Area

3.25. The scale of the City region is such that its farther development would bring benefits to other parts of the North East, but there would be limits to their extent. In particular, they would be unlikely to reach Moray and western Banffshire in any strength. Partly for this reason, but for more positive reasons as well, we suggest that a second, though minor, growth area should be designated on the coastal strip of the Moray Firth and that it should be centred on Elgin.

3.26. After Aberdeen, the lowlands of Moray and western Banffshire present the most favourable location for the concentration of population and the accompanying development of new industry. What we propose here is that the economic and physical planning of this region should base itself on a group of burghs and villages of which Elgin is the focal point, and which includes Forres, Burghead, Hopeman, Lossiemouth, Buckie, Keith and Fochabers. With the exception of Buckie and Keith, which are just over 16 miles from Elgin, all these places lie within ten miles of this centre. Of course, other more distant places such as Dufftown and Rothes fall within the hinterland of Elgin for certain services—there is even some travel-to-work from Rothes; but the places named represent the significant limits of the travel-to-work area.

3.27. Buckie is at the limit of this radius. But there is already an appreciable daily movement from the burgh to Elgin for work purposes, and we consider it very important to strengthen this association. Buckie, indeed, has a very positive contribution to make to this grouping. It contributes more than 7,000 to the total population of the area. Its labour force includes some skilled workers as well as men displaced from the declining fisheries who are tending to move away from the area for work. Also, from the physical point of view, it offers some particularly good, detailed planning factors for the development of housing and industry.

3.28. The whole of the area enclosed by this group of places should be treated as a unit for economic and physical planning, with the object of developing it as a single labour market area. Within a sixteen-mile radius of Elgin there is a total population of some 66,000 and given a readiness on the part of labour to move around, this provides the basis of a sizeable labour force. But development would in the end be stimulated

if the population were larger, and this could be achieved if some of the labour now being released in the whole northern part of the region, from agriculture and fishing, and which at present tends to leave the North East altogether, could be retained there.

3.29. We have been led to choose this area, centring on Elgin, partly because of its semi-autonomy within the region. This degree of independence applies even more strongly in the relations of the area with Inverness. Elgin and its surrounding burghs are not within the sphere of influence of Inverness: their external ties tend to be with Aberdeen. This means that the area is unlikely to benefit in any automatic way from developments on the Cromarty Firth and at Inverness itself. On the other hand if some independent development can be set off in the Elgin region this could well lead to links with the economy of the Inverness area should this eventually be launched as a growth point.

3.30. This possibility is linked with a tangible present advantage of the Elgin area—that it is traversed by the road and rail communications between Aberdeen and Inverness. The advantage of this position is that the benefits flowing from physical improvement of the A.96 link between Aberdeen and Inverness, improvements that will increasingly become necessary should the latter place develop strongly, will automatically be conferred on the Elgin region. This road at present runs through the middle of Elgin where the through-traffic and the local traffic cause increasing congestion. The time is approaching when the diversion of traffic from the centre of the town will become essential, and in fact an inner relief road has been sanctioned and will be started in two to three years' time. This is expected to cope with the problem for a number of years.

3.31. The traffic problem of Elgin is in large measure a reflection of the role it serves in the northern part of the region. It is in fact a most powerful argument for making this an area of concentrated development that it has the town of Elgin as its natural focus. The burgh is the second service centre of the region and could be developed to serve a considerably larger population than at present looks to it. Furthermore both Elgin itself and the whole area of which it is the hub offer very great amenity advantages, placed as they are between a fine coast and magnificent upland country, and enjoying a remarkably favourable climate. Indeed the climate of this area with its mildness and exceptional sunshine records is an important attraction to place before incoming firms and their personnel. It also makes it a most suitable location for a build-up of population which, in the longer term, could be substantial.

3.32. The amenity argument for an area like the Moray-Banffshire zone is of major importance, and no less so for being incapable of quantification. But there are other aspects of this area that establish its claim as a growth zone.

The population and labour supply of Buckie have been mentioned. Also to be remarked is the 'healthy' structure of its population, with its comparatively high proportion of people in the 20-40 age groups. A major reason for this is the defence establishments in the area and these do not in themselves add directly to the available supply of labour. But they do have some effect on the supply of female labour, and they contain highly-skilled men who might well be induced to settle in the area, after their service engagements have ended, if suitable jobs are available.

3.33. In recommending the Elgin region as a growth area, we do not envisage that any major build-up of housing and industry would be achieved in the period covered by our survey. What we are in effect proposing is that a start should be made on what is intrinsically a very promising area for the long-term location of population. As we have repeatedly stressed, given the present situation of the North East and the difficulties that clearly surround the attraction of industry to it, we regard the Aberdeen-Inverurie axis as the major zone for growth in the period immediately ahead. But there are good reasons other than those intrinsic to the area proposed for having a second string to the bow. Although it seems certain that Aberdeen will exert most attraction on incoming firms, there are industrialists who prefer smaller towns such as those of Moray and western Banffshire. As there are other places in Scotland with comparable economic attractions to those of both Aberdeen and Elgin, it is unlikely that firms would be diverted from the one to the other; the existence of a second growth zone would thus not detract from the efforts put into developing the major centre, and it would in fact import a useful element of variety in the presentation of the region for development purposes.

3.34. In the Appendix to this chapter we set out a feasible scheme of distribution of new population within both the growth zones which we recommend. These distributions are the result of the study made by the Scottish Development Department, and some of the planning considerations on which they are based are to be found in Chapters 5 and 6 of Part II. To conclude this chapter we consider the development of those parts of the region which lie outside the two recommended growth zones.

Other Places in the Region

3.35. We appreciate that large areas of the region lie outside these two zones of development and that considerable parts of the region, particularly in the fringe areas, will not benefit directly from their expansion. It must be emphasized here that our proposals do not imply that there will be no growth or development in these other areas; still less do they imply that they are doomed to stagnation or decline. There are indeed important reasons why certain settlements will continue to grow although not at the same rates as those envisaged for the Aberdeen and Elgin areas. First, the population dependent on primary industries will continue to require the

full range of services, and this will sustain the *vitalité* of the main district centres such as Banff/Macduff, Fraserburgh, Huntly, Peterhead, and Laurencekirk.

3.36. Secondly, and most importantly, some existing Manufacturing industries in these towns have further, possibly considerable, growth potential. Peterhead and Fraserburgh are the conspicuous cases—two towns which, we amply recognize, have had a striking measure of success in attracting industry during the last fifteen years. The industries already there will not only grow, providing more jobs in the process; they must clearly be given every encouragement and opportunity to do so. Nothing said in this Report must be taken to imply that this should not happen.

3.37. Thirdly, there is the possibility of 'spill-over' effects from the Aberdeen and Elgin growth zones. Places at present outside the areas we have delineated may well acquire functions as suppliers of ancillary services, or as residential centres for labour prepared to travel over longer distances to work. Also in this connection growth points outside the region should not escape notice: Nairn and Grantown-on-Spey, for example, may benefit eventually from developments around Inverness; while Inverbervie and the southern parts of Kincardineshire, which already have close employment ties with Montrose, will benefit from growth in the Tayside region.

3.38. Finally, on the matter of industrial—or at least non-rural—development we must make it clear that every place in the region is free to exert its powers to attract industry. Nothing in this Report envisages any trammelling of this power; and indeed, given the development area status of the whole region, every point within it enjoys equally the inducements that go with it.

3.39. Nevertheless, it has to be recognized that the settlement pattern in those parts of the region well removed from major development is not going to retain its present structure. Already the dispersed settlement is in rapid decline; a regrouping of the rural population is in progress. The tendency both in forestry and agriculture is for labour to want to live in larger settlements and to accept the need for longer travel-to-work. In forestry this will be accentuated as the concentration of sawmilling and associated activities proceeds. As a consequence there are more small villages than are going to prove socially and economically justifiable. And the force of this argument will increase with the concentration in district towns of services such as education.

3.40. In the upland core of the region the first priority should be the maintenance of existing centres which are far enough removed from the market towns to maintain important service functions as well as to concentrate local employment in forestry and tourism. Aboyne, Alford, Ballater, Braemar, Lumsden-Rhynie, Strathdon and Tomintoul fall into this class. The action of Banff County Council in channelling the housing developments associated with new distillery capacity in Glenlivet to Tomintoul, to

make fuller use of an existing service centre is an example of the kind of policy needed. It must be emphasized however that more research than we have been able to do is called for on the optimum pattern of settlement in these rural areas. Much may depend on the feasibility of concentrating on the development of mobile services based on the district towns rather than on static facilities in the smaller villages. Until more evidence on this is available it is difficult to suggest the appropriate choice of places for development.

3.41 Elsewhere in the fringe zone there are likely to be similar opportunities for the regrouping of settlements but, again, important problems of selection arise. Although local authorities have often tried to limit the number of villages which should be encouraged to grow and whose infrastructure should be improved, it is our strong impression that too many are being considered and a more concerted policy of concentration is required. We recognize that this is no easy task. In Banffshire, for example, Cornhill might be selected for such development; but difficulties arise from the existing road pattern, from the exposed position of the place and from the fact that several established local centres already exist in each district. A continued fragmentation of local servicing effort, and hence of new housing development, may be difficult to

avoid. But the problem should be faced and some grasping of nettles undertaken.

3.42. In the interior of Banffshire Aberchirder is the best developed settlement at the moment, while Cullen and Portsoy have potential as tourist centres. In Buchan there has been some regrouping of services first at Maud and then at Mintlaw. Greater specialization of functions may allow both to retain their importance in conjunction with planning for Peterhead, while a similar role for New Pitsligo and Strichen in relation to Fraserburgh might be developed.

Summary

3.43. The theme throughout this chapter has been the need for greater concentration in the planning of new developments, whether major or minor, in the North East. We propose that, as far as possible, new industrial and housing developments should be concentrated in a major growth zone to be established in the Don Valley between Aberdeen and Inverurie, and in a smaller zone embracing a group of burghs in Moray and western Banffshire, and centred on Elgin. Elsewhere in the region the natural trend to a greater concentration of population and services in the larger rural centres should be encouraged, though it is recognized that the problem of selection is not an easy one.

APPENDIX TO CHAPTER 3

A Possible Distribution and Regrouping of Population

A3.1. Our remit for this inquiry did not require us to examine the locational and planning implications of any specific increase in the region's population. Nevertheless there are important reasons why we should give some attention to this question. The strategy which we outline for the region is based on economic considerations. It recommends a policy of attracting new development to the region by establishing two areas of concentrated development. It is of the essence of this policy that a concentration of new housing should accompany that of industrial development. Having formed our views as to where these zones of development should be, it appeared right to us to test what we were recommending with reference to the major planning constraints of the areas in question. Accordingly, we asked the planning staff of the Scottish Development Department to carry out a feasibility study of the location of a notional number of people in the two recommended areas of concentration. The figures which we proposed for their examination were an increase of 20,000 people in the Don Valley zone, and 6,000 in the Moray-Banffshire area. The time scale over which this development should be considered presents major uncertainties and will be discussed later.

A3.2. It should be made clear where the housing and population, which on our proposal should be concentrated as far as possible in the two areas selected, will come from. There is a number of potential sources. An important bloc, particu-

larly in the Aberdeen City region, but also elsewhere in the North East, will be population displaced from existing urban areas by redevelopment and rehabilitation of sub-standard housing. We have seen that in the Aberdeen City region the number of people involved here might reach 11,000. For the county areas we have no information to indicate the extent of necessary redevelopment; but assuming at this point that the population of the whole region were to reach the level in 1976 at which it stood in 1966, the increase in the number of households in the present extra-City population might involve a total population of 12,000.⁽¹⁾ If we assume that these would all have to be rehoused and that one-half of them would be 'mobile', in the sense of available and willing to move to the two areas of concentration, we have a further 6,000 of population to be accommodated.

A3.3. Then, thirdly, there will be a number of people who will have to be relocated through the ordinary process of structural change in the region—change that will be proceeding regardless of the success or otherwise of any new policies. This again is a very difficult figure to predict since it is related to the *grass rises* and falls in employment at the level of individual enterprises, not simply the *net* changes at the highly aggregated level of our own figures. The figure of 5,000 is suggested here, but it is hardly more than a guess.

⁽¹⁾ For a fuller account of this calculation see Appendix A.

A3.4. Finally, there is the possibility of a net increase in the population of the region as a result of action taken to make it more attractive to incoming industry. If industry is attracted into the area, from the early seventies onwards, on a scale that not simply halts the outflow of people from the North East, but reverses this trend, then clearly the need to accommodate numbers of people would also arise from this cause. This would be a very desirable outcome, but as we have indicated in Chapter 1, and more fully in Chapter 7, we regard it as unlikely to arise before 1975-76. In fact, the objective which we propose as realistic is a stabilization of population by the mid-seventies: this would inevitably mean that population would be lower in 1976 than in 1966. However, if we go beyond that date, to 1980, we move into a period when the policy of drawing new industry into the region could be successful to the point of causing the regional population to begin, once more, to rise. This would then produce a component of population to be accommodated.

A3.5. From this discussion, it is clear that the figure of 26,000 may well exceed the number of people available for relocation in the growth centres of Lower Donside and the Moray-Banffshire sub-region by 1976. Nevertheless, in making a study of physical capacities it was wise to test these by a figure in excess of the apparent possibilities in the immediate future. But the figure in itself is by no means unrealistic if one looks to the end of the seventies; we said at the outset that we had not allowed ourselves to be constrained by the time horizon of 1975, and this is clearly a context in which we should look further ahead.

A3.6. We therefore propose that this figure should be kept in view as a target in a phased programme the later stages of which would be reviewed in the light of the success of policy in reversing the present population trend. The earlier phase of the policy can proceed, in the face of an overall decline in population, because it is called for simply by the needs of urban redevelopment and the relocation of population as a consequence of structural changes in the region's economic activities.

Physical Planning Proposals

A3.7. Following our conclusions that development should as far as possible be concentrated in the two areas designated, we have, with the help of the planning staff of the Scottish Development Department, selected certain places as likely points for expansion. In identifying these we started from one major principle: that any large new developments should, as far as possible, be located in and around existing centres, rather than in new, or substantially new settlements. Proceeding from that, we applied various criteria which included:

- the location of places on existing major communications routes, and the facility of movements between the selected settlements within each group;
- the provision of necessary daily services such as shopping and schools;

- the selection of good environments, attractive to industry and offering acceptable levels of amenity for residential development, public and private.
- the provision of a choice of residences for those working in any of the places, including the City, within either of the selected areas of concentration;
- in the special case of the Aberdeen City region, the need to ease congestion in the Aberdeen central area and the pressure for development on the City boundary consistent with the retention of a good environment.

A3.8. It must be stressed that in selecting the following places, no attempt has been made to identify actual sites for development. The allocation of land for residential and ancillary uses as well as for industry, is properly the responsibility of the appropriate local planning authority. But before any growth figure could be decided, a broad assessment of the physical capacities had to be made. As a result it is proposed that the existing settlements in the Don Valley, in the Elgin area, and to a lesser extent in other selected locations, should be further expanded by encouraging the growth principally of Manufacturing industries. Associated with the manufacturing centres, and within easy commuting distance of each, are grouped settlements which, it is suggested, could be expanded to accommodate the increased population. The resulting growth suggestions indicate the range of population increases which would be possible in these various centres:

	Residential Settlements (with suggested increases in population)		Industrial Growth Centres
Aberdeen City region	Dyce	(7,500)	Dyce
	Bridge of Don	(2,500)	
	Inverurie	(5,000)	Inverurie
	Kintore	(1,500)	
	Kemnay	(500)	
	Blackburn	(250)	
	Stonehaven	(1,750)	
	Banchory	(500)	
	Portlethen		
Moray-Banffshire Sub-region	Stairion	(500)	
	Elgin	(5,500)	Elgin
	Buckie	(1,000)	Buckie
	Keith	(500)	
	Forres	(500)	
	Forchabers/ Moutedloch	(500)	

The location of these centres is shown in Map A3.1 by means of squares of areas proportional to the present and projected population sizes.

The Individual Settlements

Donside Group

A3.9. The largest of these is *Inverurie* (5,194),⁽¹⁾ and it is also the furthest from Aberdeen, at 14 miles distance. We regard this as, for the time being, forming the end of the chain of settlements for development. It is a pleasant, well-served

⁽¹⁾ Except where noted otherwise the population figures are the mid-1967 estimates of the Registrar General for Scotland.

town with rail and bus connections with Aberdeen and Inverness. It has a hospital (72 beds) and its schools comprise two primary and one primary and secondary school (with a roll of over 1,200). *Kintore* (777) though a burgh, is really a large village. It is nearer to Aberdeen, and is well-placed for some intermediate development which could be associated with Inverurie and Aberdeen. *Blackburn* (457)⁽¹⁾ and *Kenny* (981)⁽¹⁾ are villages sited off the main line of the Don. They have some good facilities for their size and are situated in attractive countryside. We envisage them providing locations for housing, including a private housing component. *Dyce* (1,530)⁽¹⁾ has recently been approved as a site for a major development for housing and industry by Aberdeen County Council, and the figures we suggest take this into account. It is strategically placed in relation to existing Don-side industry, and is itself the site of the Airport which might well attract incoming industrialists. The road links with Aberdeen will require improvement in step with development. The suggested development at *Bridge of Don* (2,106)⁽¹⁾ continues, and rounds off the present development there. This is a location with very ready access to Aberdeen City, and there is an industrial site already under construction by the County Council. We consider that this development should not extend too far to the west, to preserve the open aspect looking northwards across the Don from Bucksburn.

Elsewhere in the Aberdeen Region

A3.10. *Stonehaven* (4,341) already plays a part as a satellite of Aberdeen. As this will clearly continue, it is sensible to provide for it in any plan for the City region. It is a very well-served burgh, with good shopping facilities, a hospital and a secondary school, with considerable amenities and recreational possibilities. *Portlethen Station* (236)⁽²⁾ at an intermediate position between Stonehaven and Aberdeen, has good and recently modernized infrastructure, including schools, which offers a suitable point for some development. Both Stonehaven and Portlethen are examples of places which are clearly attractive, and their inclusion is in line with the principle of increasing the variety of choice of locations within the City region. *Banchory* (2,004) is in a somewhat similar position: a holiday town on Deeside, 18 miles from Aberdeen, with the amenities and services appropriate to its function, it already has a small commuting population and as the range of travel-to-work extends, is clearly going to attract more. Physical constraints place some limitations on the total development that can be accommodated there. But we think that, again in the interests of variety of choice, some development should be allowed for here.

The Moray-Banffshire Area

A3.11. The centre of this area of concentration is *Elgin* (15,720),⁽³⁾ and we see this burgh as developing further its function as a central place

dispensing major services to a wide area around it, and also as the location for a large part of any developments—houses and industry—put into the area. The town is clearly marked out for this: it is a commercial and shopping centre—its shops include a department store and several national multiples—and it is also the second-largest centre of office employment in the North East. The attractive aspect of Elgin, its mild climate and its surrounding countryside, have already been remarked on in the foregoing chapter. *Buckie* (7,496) on the Banffshire coast, at a distance of 16½ miles from Elgin, is well suited to further industrial and housing expansion. It has very good physical factors, including a large area of level land with good access to the main coast route. It already has some industry, including ship-building and electrical goods; but it is suffering more than most coastal settlements from the decline of fishing. *Keith* (4,092) is an established small service centre for mid- and upper-Banffshire. It is on the main trunk road and rail communications, and has some existing textile and distilling industry. It is 16½ miles from Elgin and 14 from Buckie. *Fesham/Maxtonloch* (1,229),⁽¹⁾ a pair of closely-related settlements, situated very favourably at the centre of the triangle formed by Elgin, Buckie and Keith, at the junction of the A.96 and the A.98 trunk roads, has some local industry and would benefit from some increase of population. Finally, *Ferry* (4,566) lies 12 miles west of Elgin, well-placed to develop a relation with it as a site for residential development. It is an attractive town of high amenity, with good shopping and educational facilities.

A3.12. To implement these proposals detailed consideration will have to be given to infrastructure and in this direction communication improvements, water supply and major recreation facilities require attention. Consideration should be given to the following:

- (1) An improved trunk route between Aberdeen and Elgin including specific by-passes at Inverurie and Kintore and the provision of dual carriageways in the built-up section at Bucksburn. An improved circulation should be evolved for Huntly.
- (2) An improved link between Dyce and Aberdeen in the longer term.
- (3) An improvement of Anderson Drive (A.947) in Aberdeen City to make the fullest use of the existing route and as a longer term measure consideration should be given to a western by-pass of the City.
- (4) An inner relief road to be provided in the town centre of Elgin and a further relief route in the southern part of the town related to industrial expansion.

⁽¹⁾ Census 1961 (the latest available figures for non-burghal settlements).

⁽²⁾ Following a boundary change in 1966 Elgin includes New Elgin.

- (5) The provision or maintenance of adequate local bus services between the various settlements contained in each separate group and the maintenance and improvement of rail services with allowance for possible commuter services linking Aberdeen with its City region.
- (6) The provision of more recreational facilities in the region, particularly under the powers granted by the Countryside (Scotland) Act 1967.
- (7) Greater priority for water supplies in the Inverurie and other growth areas.

City region; it might conceivably be significant in Moray-Banffshire, but only if a more rapid build-up of population than we envisage were to be undertaken.

Phasing of Planning Proposals

A3.15. It is recommended that within the two growth areas proposed the earlier developments should be concentrated in the following places:

- (a) *Inverurie* at the northern end of the Don Valley, in order to ease the pressure on Aberdeen and ensure the success of this extremity of the overall linear development, as well as to offer an early alternative to those not wishing to commute to the City.
- (b) *Elgin* because of its large labour catchment area within a 16-mile radius and its position as the sub-regional centre.

A3.16. Some of the locations believed to be favoured locally for the expansion of Aberdeen City region have not been included in our recommendation. The reasons for this include the fact that they are unrelated to the regional communication pattern, or have adverse local climatic conditions and possibly drainage difficulties; but most important of all, they would tend to perpetuate the radial spread of the City in several directions at once. Westhills of Skene, for which re-zoning approval has been given by the Secretary of State, but of which so far only a limited portion has been serviced, is not particularly suitable for a large-scale expansion partly on account of its bleak environment as well as anticipated drainage problems. In much the same way Balmedie and the Altens area, both of which are being considered by the relevant authorities, appear unattractive for residential development. We recognize, however, that within the timescale of planning, and given the impending exhaustion of developable land within Aberdeen, it may be necessary for some previously planned development to go ahead. In this case, we would regard the development proposed for the Sheddocksley area as most capable of being related to the linear pattern of expansion along Donside which we favour.

A3.13. Also of crucial importance will be the provision of adequately-serviced industrial sites at those points—particularly Inverurie, Dyce, Elgin and Buckie—which we designate for an industrial component. Here we would reiterate our belief in the importance of advance factories for attracting industry. The Board of Trade should be asked to consider as a matter of urgency, some further advance factory building in the region, particularly at first at Inverurie, but also at Elgin. But the local authorities themselves should consider if they could follow the example of Aberdeen City in undertaking some advance provision of factory space.

Thresholds of Expansion

A3.14. The thresholds of expansion are largely those of water supply and drainage. It is understood that drainage is, or can be, readily made available for much of the proposed expansion. The water supply position is at present somewhat restricted in the immediate vicinity of Aberdeen City, but this is likely to be rectified in the early 1970s by the new Deveron water scheme. This at present suggests that priority may be given to the lower Donside and northern part of the City; this is likely to encourage the early development by private enterprise of sites at the Aberdeen end of the proposed linear growth along the Don Valley and to inhibit successful expansion at, say, Inverurie. A possible constraint of a different kind is the capacity of the Construction industry to cope with the developments proposed. This would not be operative at all in the Aberdeen

Summary of Conclusions and Recommendations

4.1. The analysis of present problems and trends in North-East Scotland, most of it contained in the detailed studies of Part II which follows, leads us to conclusions about the trends, and recommendations about the directions which policy should take in regard to the region. Our major conclusions and recommendations are summarized very briefly in this chapter.

The Problems and Assets of the Region

4.2. The North East presents its own variant of the general problem of economically 'lagging' regions. One of the more obvious symptoms of this is the decline—so far, a slow one—in its population, resulting from an excess of net outward migration over the comparatively high rate of natural increase. This decline is not yet serious, but if sustained will begin to have adverse effects on the population structure by the late 1970s.

4.3. Other related symptoms of the regional problem are a rate of unemployment which is markedly above the national average, a comparatively low activity rate, especially among women, and a widespread use of labour at low levels of productivity.

4.4. As in other 'lagging' regions the problem of the North East springs from an imbalance between industries in which employment is expanding and those where it is contracting. In the region, contraction of employment is most marked in the Primary sector, especially in agriculture. The Manufacturing sector as a whole has been growing quite fast by national standards in recent years and the same is true of Construction. The large Service sector has increased its employment of women, but decreased that of men.

4.5. In the first half of the 1960s employment as a whole expanded somewhat but not sufficiently to stem outward migration. Furthermore, employment for men declined overall, and this is the crucial factor for migration.

4.6. We see no evidence of a favourable change of trend down to the mid-1970s and indeed some projections of the balance of supply and demand for labour point to a worsening of the position. There will be some further expansion of employment in Manufacturing. But the Primary sector will continue to shed labour, both employees and

self-employed, and Construction which grew rapidly in the sixties will probably remain more or less static. The Service sector will see some expansion in employment, but numerically this may well be offset by a drop in the self-employed.

4.7. In spite of these difficulties the North East has substantial assets for its further development. The greatest of these is Aberdeen City itself which, together with its surrounding region, contains nearly a quarter of a million people. With its exceptional provision of Services and its high level of amenity it is an outstanding regional capital with considerable potential for development.

4.8. But the region as a whole offers reserves of trainable and adaptable labour. These are to be found partly in the labour released from declining industries, in the low activity rates and in the people at present migrating from the region. In certain parts of the North East, notably the Elgin and Peterhead-Fraserburgh areas, the concentration of population is surprisingly high for a rural region.

Objectives for Policy

4.9. Policy action in the North East must aim at stemming the present decline in population. Quite apart from any longer-term role of the region in a national population policy, some eventual increase in the regional population is essential to ensure the viability of its economy and services. The immediate objective however should be to stabilize the total population of the region and we think that this should be the prime aim for the mid-1970s.

4.10. A minimum condition for achieving this will be the provision, up to 1976, of about 8,000 jobs over and above those likely to be created by foreseeable trends. Between 6,000 and 7,000 of these would have to be imported into the region from outside, and these must largely be sought in new Manufacturing activities. The remainder would be created locally, in the Service and other sectors, as consequence of this importation of jobs.

Regional Policy Measures

4.11. In the foreseeable future, policy in the North East must work within the framework of national regional policy. This policy now comprises substantial inducements to Manufacturing

and certain other types of industries, to move to, or expand in, the development areas. But the North East must compete, as a region, by every possible means, for industry which is on the move.

4.12. We see the concentration of population and accompanying industrial development, by regional planning measures, as a major means of enhancing the attractions of the region for mobile industry. We consider that at the moment the North East can support only two main zones of concentration. One of these, the major zone, should be located in the Aberdeen City region: here the main portion of future development should be concentrated along the Lower Don Valley, and should take the form of expanding certain existing settlements as far as, and including, Inverurie. The second, smaller, growth zone should be established in the lowlands of Moray and western Banffshire, centred on Elgin, but including Forres, Burchard, Lossiemouth, Buckie, Fochabers and Keith.

4.13. Both areas of growth should be developed as unities with the aim of increasing the scope and efficiency of their local labour markets, since we see the limitation of these markets as a major deterrent to development in the North East. This will require the maintenance and improvement of communications and public transport within the growth zones themselves.

4.14. The sources of population for concentration in these two zones would come from the overspill of population beyond the present (1968) boundaries of Aberdeen City, consequent upon redevelopment and rehabilitation of existing sub-standard housing; from the regrouping of the region's population due to structural changes in occupations and industry; and eventually, when population begins to rise, from this increase itself. It is especially important that the further development of Aberdeen City should be directed towards regional objectives.

4.15. The main instruments of such a policy will be the concentration of housing development and new industry in the two areas of growth. Such concentration will require financial support from the Central Government for improved infrastructure, especially roads, within the two areas, as well as continued improvement of the road links between the two, and between Aberdeen City and the south.

4.16. Further support will be necessary in the provision of advance factories at selected locations within the two zones of growth.

4.17. We recommend that a start be made on housing and factory development at Inverurie and Elgin.

4.18. In recommending this degree of concentration of development we are not saying that other places in the region may not, or should not, develop. Existing regional inducements are available to all places in the North East and none should be precluded from attracting incoming firms. Some places, such as Fraserburgh and Peterhead, will certainly continue to expand as their existing industries grow; others may well be successful in attracting new activities.

4.19. Under the present structure of local government the implementation of our major regional planning recommendations will depend on co-operative and co-ordinated action between the existing authorities. This co-ordination of planning is essential if the region is to realise its full possibilities. Nowhere is this more the case than in the Aberdeen City region where present local authority boundaries, and the present means of modifying them, obstruct the rational planning of an area that should be developed as a unity.

4.20. A final planning recommendation is that in the rural hinterlands of the region, the policies of concentrating population in fewer, larger villages—policies subscribed to by all the county authorities—should be pursued more strongly. We recognise that in the very sparsely populated areas, the desirable degree of concentration is not easy to determine and we recommend that further detailed study be made of this question.

Developments in the Regional Economy

Primary Industries

4.21. It is anticipated that manpower in agriculture will continue to decline, accompanied by further mechanization, more amalgamation of farms, and a shift to less labour-demanding enterprises. But prospects for the maintenance of output will depend increasingly on the ability to maintain some minimum of skilled manpower in the industry. The food processing industries, which have expanded vigorously in recent years, are vital to certain sections of agriculture, especially livestock production. Prospects for vegetable and fruit processing, though real, cannot lead to more than a marginal creation of employment.

4.22. Fishing, like agriculture, is declining though much more slowly. Also like agriculture it depends on Government aid of various kinds, but it is subject to such external factors as the increased exploitation of fishing grounds. Employment on the catching side of the industry is declining slowly, and while we expect this to continue technical developments could accelerate it. Shore labour has been fairly static and an even slower rate of decline is expected here. In our recommendations we stress the necessity for continual experiment in catching, processing and marketing, and the encouragement of modern methods already developed. But continued Government support for the industry is vital, and should be channelled through a single authority.

4.23. The forest industry is important to the region, particularly in the rural communities. However a trend towards concentration in saw-milling as well as greater mobility among extraction workers are leading to some relocation of operations and labour. The planting activities of the Forestry Commission, the largest forest owner in the region, are now running into difficulties owing to shortage of land available for planting. On the production side, forest operators are faced with an increasing supply of small roundwood, for which demand in existing markets is declining. One potential use for this would be pulping

in a mechanical pulp mill and we recommend that the economics of such a development be investigated. The establishment of a board mill in Moray also calls for study. Finally, on many grounds, we recommend the further exploitation of local forests for recreational and tourist purposes.

Manufacturing

4.24. There was some significant expansion in Manufacturing industry in the 1960s especially in food processing, in Paper and board making, and in some branches of the Textiles and engineering groups. Elsewhere, notably in Shipbuilding and marine engineering, there was some decline. It is in the attraction of new Manufacturing plants to the region that the main hope for regional development must lie. But detailed recommendations are difficult to make here; we can merely suggest certain broad fields of industry which might be suitably located in the region.

4.25. One general principle usually stated in this context is that representatives of fast-growing industries should be encouraged to come into the region. We do not dissent from this as a principle, but it should be noted that it is no easy matter to predict future growth rates of industries. Also, industries which at the national level are static or even declining, may have considerable growth potential within a particular region.

4.26. The North East could not expect to attract new industries with heavy transport costs of raw materials or finished products (unless other very favourable conditions were present) or with massive labour needs. The region contains, especially around Aberdeen City, a labour force possessing skills suited to engineering and metal-working industries. It has also been demonstrated by incoming firms that local labour, drawn for example from Primary industries, is highly trainable in such skills. Industries of this kind, suitably selected, could provide very necessary employment for men.

4.27. Some branches of the Textile industry, especially hosiery and knitted goods, could be further developed. Also, the region has had success in attracting clothing firms. For both of these, suitable local labour exists, while some necessary materials are also produced locally.

4.28. The higher educational institutions and research institutes in the Aberdeen area offer an environment that could be attractive to science-based industries. But competition for these between regions is intense. We suggest the concentration of local efforts on attracting industries with a biological content, since the institutions of the area are strong in this field. Plants of the pharmaceutical industry as well as the research and development units of a variety of industries could however be suitably located in the North East. In the electronics and communi-

cations field we suggest that the area should be considered by the G.P.O. should it decide to engage in manufacturing its own equipment.

The Service Sector

4.29. The large and heterogeneous Service sector (including transport) employs more than half the labour of the region, a proportion which is higher than the national average, though not by very much. Within the region some service occupations, such as Professional and scientific services, are very strongly represented. Others, such as National Government service and Insurance, banking and finance are underrepresented. The future outlook is for a continued growth in the sector as a whole, but there is a range of uncertainty as to how great this will be.

4.30. Service employment may usefully, though roughly, be divided into those that mainly depend on the scale of the local economy, and those that are 'export' services, in the sense of being financed by expenditure from outside the region. Among 'export' services two are considered in detail: office employment and tourism.

4.31. The conclusion we reach on office employment is that Aberdeen City is intrinsically capable of sustaining some development in this field in that it has suitable labour, services and amenities. Its communications are also favourable (except for postal communications which could be improved). But the remoteness of the City from major centres of business and population is, undoubtedly, a disadvantage, if only of a psychological kind, to this type of development. However, the North East has a comparatively low level of employment in national administration, and the location here of some of the offices of Central Government should be given serious consideration.

4.32. There is a tendency to regard tourism as the answer to the problems of peripheral, but scenically attractive, areas such as the North East. It is by no means a negligible factor, but in our view, no major reversal of regional economic trends can be founded upon it. Further development of tourism will be a useful addition to the income of the North East, but its effect on employment may not be great. Nevertheless, it is an avenue for action very much under the control of the area itself. Here it should be recognized that the character of tourism is changing: the tourist is becoming more mobile, and this affects the kind of facilities that should be provided for him. In particular, more camp and caravan sites and motels are required, some of which should be sited in the very fine forests of the area. Above all, in its publicity, the region should present itself as a unit, as a single holiday-making area offering a wide variety of attractions in its countryside, its towns and its coast. For this purpose we consider that a single North-East Tourist Board, supported by all the local authorities of the area, should be set up.

Survey of the Region

shelter the region from the high rainfall brought in by the Atlantic depressions from the west. Easterly winds affect the climate of the coastal strip particularly in spring and early summer when sea mist (the 'haar') is blown in. The Moray coast however enjoys a favourable situation in the region: its sheltered position leads to lower amounts of rainfall and cloud producing a climate which is marked by mildness and high sunshine records.

5.6. Such in very sketchy terms is the environment of the region which has experienced centuries of colonization to develop a complex and distinctive settlement pattern which is summarized in Map 5.2. The map is based on the Census figures recently made available for individual settlements,⁽¹⁾ and nucleated settlements are there differentiated from the dispersed population living in settlement groupings containing less than five houses and generally less than 15 persons. In interpreting the pattern reference must be made initially to the resources for Primary Industries, agriculture and fishing especially. The agricultural endowment is very varied with considerable variation in soil quality and in the ease or difficulty of drainage. The easily-drained sands and gravels and lower valley slopes were attractive to the early settlers; but conditions in much of the lowlands delayed the main advance until the early nineteenth century when the improving landowners transformed the natural barrenness of their estates. The farming landscape in the lowlands, complete with its drainage works and consumption dykes, is the work of centuries of sustained effort and exhibits contrasting patterns of settlement. The smallest nucleations, comprising large farms and estate communities, are most prominent in the Garioch of Aberdeenshire, the Howe of the Mearns in Kincardineshire and the Laich of Moray, all extensive areas of fertile land before the advances of the improving movement. By contrast, there are remarkably high densities of dispersed settlement in the areas developed at this later time when small farmers and crofters gradually pushed back the limits of moor and moss.⁽²⁾ Thus the Deer, Ellon, Garioch and Turriff districts show up particularly well in this respect. Farm amalgamations are however bringing important changes in the lowlands while the retreat from the more marginal land in the hills has a striking impact in terms of abandoned farmsteads.

5.7. The main urban centres were originally the small royal burghs whose commercial privileges for long prevented other large settlements from developing any importance. At the local level, the old 'kirktowns' acted as focal points in the parishes; but since they were not always served

directly by the later turnpike roads and railways' fragmentation arose and many small hamlets sprang up at appropriate roadside sites or beside railway stations, some of which, like Alford, Fordoun and Maud, led to significant local groupings of settlement. A much more dramatic process however was the establishment of planned villages in the eighteenth and nineteenth centuries when individual landowners introduced the ideas of the industrial revolution on a small scale in new urban settlements in the heart of the countryside. In many cases development took the form of a new estate associated with an existing town as at Huntly, Keith (New Keith and Pife Keith) and Elgin (New Elgin and Bishopmill); but many of the new villages were inevitably quite separate and independent. For service functions today however they are less than satisfactory: Laurencekirk and Grantown-on-Spey are well located, but in the interior of Buchan, where there was a similar need for urban development in a central position, the effort was dissipated in the development of several rival villages. Some of these, notably Fetterangus, Newbyth and Stuartfield, are particularly badly placed to acquire new functions. Similar problems arise in Banffshire where Newmill is badly located although Aberchirder with hugh status is an important centre. In the main valleys of the upland zone important settlements emerged at Aboyne and Ballater on Deeside, and at Grantown-on-Spey, although further down the Spey urban growth was fragmented by the rival towns of Aberlour, Dufftown and Rothies. Elsewhere in the uplands development was very sporadic: Tomintoul provided a new focus for its district but, as a firmly concentrated settlement, has few parallels.

5.8. The fishing settlements along the coast have always been rather less stable, since the very sites of these settlements as well as the organization of the industry have been subject to sharp changes in fortune. The coastal scenery of the North East is both fine and varied, with sections of cliffs alternating with long stretches of low sand and shingle beaches; but this creates difficulty in the search for both sheltered and accessible harbours, with the further difficulties of silting and shoaling produced by the movement of sand and gravel under the influence of winds and tidal streams. It is remarkable how little settlement has been attracted to the mouths of the major rivers of the region; only in the case of Aberdeen was there an irresistible stimulus, inherent in the town's nodal position and its close links with the south by sea, to overcome the serious hazards of the Dee estuary both to construct and maintain a harbour in it. At Banff the larger vessels of modern times, coupled with the shifting course of the Deveron, have made the task of improvement an impossible one, and alternative harbours have been developed at Macduff on the opposite side of the estuary and at Bockie, 21 miles further west. The port of Lossiemouth has likewise been replaced by the harbour at Branderburgh, while Peterhead built a harbour between the mainland and Keith Inch rather than use the sandy estuary of the Ugie. The Spey is perhaps the most remarkable case of a

⁽¹⁾ See *Place Names and Population—Scotland* (H.M.S.O. 1967).

⁽²⁾ Further information on settlement evolution is contained in K. Walton, "Population Changes in North-East Scotland, 1696-1931", *Scottish Studies*, Vol. 5 (1961), pp. 149-180, and "Regional Settlement", in the British Association handbook *The North East of Scotland* (1963), pp. 87-99. Also see D. Turnock, "Depopulation in North-East Scotland with reference to the Countryside", *Scottish Geographical Magazine*, Vol. 84 (1968), pp. 236-268.

river without major settlements in its lower reaches: its shifting channels have defied development, and only the tiny village of Kingston stands as a legacy of early attempts. Rather, the main developments have been at Elgin and Lossiemouth to the west, where there were better defensive sites and harbours, and at Buckie and Keith to the east where harbour facilities and water power were later sought.

5.9. In many cases where small fishing harbours were developed, the settlements were forced to cluster on limited strips of raised beach, as at the 'scatons' of Cullen and Findochty. From the sixteenth century on, a multitude of such communities developed in response to the herring and white fish resources which were perhaps the most attractive in the whole of Scotland. The larger villages were the coastal equivalent of the planned villages inland: Buckie, Fraserburgh, Macduff and Gardnarsburgh are examples of these. Many of these settlements eventually achieved burgh status and, along with such older towns as Banff and Portsoy, produce a remarkably dense strip of population along the limited stretches of the coast, especially round Banff and Fraserburgh, the villages as well as the small burghs each having their own identity.

5.10. The settlement of the coast is therefore most uneven but generally the large number of individual villages is anachronistic in the context of larger-scale organization. After a peak of optimism in Victorian times, when many improved their harbours to accommodate bigger boats, all but a few were hit by the heavy capital outlays needed to accommodate the steam drifter and its successors. Some have been close enough to the larger ports to develop a suburban relationship and thus maintain the fishing interest, while others are close enough to Aberdeen and Elgin to become attractive and often expanding dormitories. Others have no alternative but to base their survival on the limited demand for small centres for tourism and retirement. For all fishing towns, however, diversification is becoming essential to maintain growth, but the original attractions of their locations are not always now relevant. All the towns face grave difficulties in retaining skilled labour and young people, and although the labour available is often loyal and of exceptional quality, the limited catchment of individual towns often deters the larger firms.

5.11. In the North East as a whole, the legacy of past conditions makes for a poor grouping of settlement today, with a large number of burghs and villages many of which have lost their original functions either wholly or partially. But it is clear that the weaknesses of the present pattern are being overcome to some extent by the population regrouping itself as a continuous voluntary process. Table 5.1 shows that while the total population of the region in 1961 was twice what it was in 1801, the population of the Aberdeen and Elgin areas has risen nearly sixfold during this period. Trends in those remaining parishes which include a settlement of burgh status are similar to those in the region as a whole; their combined population has fallen since 1901, but they still contain almost twice as many inhabitants as they did in 1801.⁽¹⁾ The rural parishes, however, grew until 1851 but as a group have declined ever since, and they now hold roughly 20% fewer inhabitants than they did in 1801. The trends in individual counties are shown in Diagram 5.1. While Moray and Nairn show exceptional stability, and the Aberdeenshire position is influenced positively by the growth of the City (separately shown), Banffshire's position is deteriorating in both burgh and rural parishes after the sharp increase in the late nineteenth century.⁽²⁾

5.12. This regrouping process is still operating and, indeed, evidence suggests that the momentum is steadily increasing. The population of the North East as a whole fell by nearly 12,000 people between 1951 and 1961 as a result of the net outward migration of 40,800, exceeding the natural increase of 29,000. A further net decline of over 2,000 between 1951 and 1966 has produced an overall decline of 3% over the 15-year period. But because of internal migration trends—movements from the countryside to the towns and also a drift from the smaller towns to the larger centres such as Aberdeen and Elgin—rates of decline were not uniform throughout the area.

⁽¹⁾ It should be noted that in the case of the burghs, the whole parish has been taken into account since this summarizes the problems of boundary anomalies, and also enables analysis to begin in 1801 when many of the burghs had not yet attained this status.

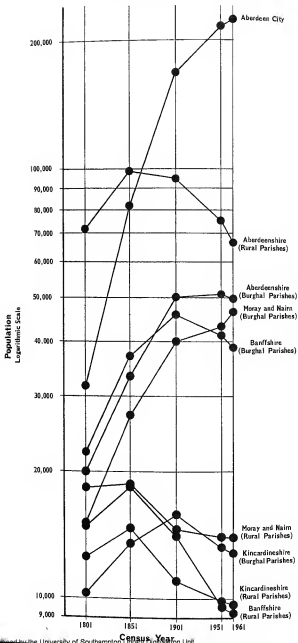
⁽²⁾ A logarithmic scale is used along the population axis of the graph. This enables direct comparison of trends in that on this type of scale equal rates of change produce lines of equal gradients. On a normal (i.e. arithmetic) scale this is not the case.

TABLE 5.1
North-East Scotland: Population Trends by Settlement Type, 1801-1961

Census Year	Population ('000s) and inter-censal change (1801 = 100) is:			
	Aberdeen/Elgin Areas	Other Burghal Parishes	Rural Parishes	North East
1801	59.6	100	117.5	100
1851	94.4	239	132.9	130
1901	186.1	473	136.9	115
1951	225.7	570	108.6	92
1961	232.4	587	123.5	194
			95.5	81
				451.4
				203

Source: Census.

DIAGRAM 5.1
North-East Scotland Population Trends
1801-1961



The more specifically demographic aspects of these movements of people are examined in Chapter 7; here, we are concerned to describe the effects which they have had, and are having, on the distribution of people in the towns, villages and smaller settlements of the region. Map 5.3, which is based on parish population figures, sets out these effects in terms of growth and decline of settlements.⁽¹⁾ The growth areas embrace the Aberdeen area, including Inverurie and Stonehaven, and most of the Elgin area, along with Forres and Nairn. The only other significant areas of growth are Fraserburgh and Peterhead. Reliable figures for individual settlements are available for the burghs and certain larger villages, and from these it is clear that trends in the towns do not always coincide with those for the parish, as for instance in Stonehaven where much new housing is being erected outside the burgh boundary.⁽²⁾ In most centres, however, rates of growth or decline over the period 1951-66 are less than 5%, although some settlements in Moray have grown very fast, especially Elgin, Lossiemouth and Fochabers. Of course, trends are often reversed, and some burghs which are larger now than they were in 1951 have nevertheless lost population in the last five years.

5.13. Many parishes in the areas of declining population have lost less than 10% of their population between 1951 and 1961, and these are generally the ones which include the remaining larger settlements. In many cases these centres themselves have grown, notably Abeyne, Banff and Macduff, Burghhead and Dufftown; most, however, have declined, especially Aberlour, Cullen, Findochty and Portknockie, all in Banffshire. Most declining parishes, however, have lost between 10 and 20% of their population over the last decade. It is significant that none of these include a settlement with a population of more than 1,000, except for Ballater, Rothies and New Pittligo, all of which are in fact losing ground considerably. Some upland parishes lost between 20 and 30%, a figure exceeded only in the cases of two small parishes in Buchan, Rathen and St. Fergus.

5.14. The overall trend is clearly one of emphasis on Aberdeen and Elgin. If these areas are generously defined to cover not only the City and

burgh areas, but also adjacent parishes in the suburban growth areas, it appears that just over half the total population of the North East was living in these two centres in 1961 compared with 49% in 1951, 41% in 1901, and only 18% in 1801 (see Table 5.2). It has not been possible to assemble comparable census figures for 1966, but it is clear that Elgin and Lossiemouth burghs have continued to grow and, as Table 2.2 (p. 15) shows, although Aberdeen City has begun to lose population, this is more than compensated for by growth in the adjacent suburban areas. It is also evident that the main areas enjoying relative stability of population tend to form outer rings round these two centres, and also axes along some of the main lines of communication. Notable here is the almost continuous belt along the coast and along the Deveron and Spey.

TABLE 5.2
Concentration of Population in Aberdeen and Elgin, 1801-1961

Centres	Population (000s):			Percent of N.E. population in Aberdeen and Elgin
	North East	Aberdeen Area ⁽¹⁾	Elgin Area ⁽²⁾	
1801	220.7	32.5	7.0	17.7
1851	349.7	82.7	11.7	27.0
1901	460.9	170.4	17.8	40.8
1951	482.5	202.9	32.8	48.8
1961	450.0	287.4	24.6	51.5

⁽¹⁾ Includes the parishes of Banchoy-Devenick, Dyce, Newhills, Nigg, Old Machar and Peterculter in addition to Aberdeen City. This area differs slightly from that given in Table 2.2, p. 15.

⁽²⁾ Includes the parishes of Drinisia, Elgin, Spynie and St. Andrews Lhanphry.

Source: Census.

5.15. Further analysis of recent trends is possible by grouping settlements in different parts of the study area into a limited number of size categories. Although figures for individual settlements over the period 1951-61 are not always reliable or comparable, the process of grouping should eliminate some of this error. The results are presented in Table 5.3 and demonstrate that in each part of the North East the largest settlements have grown while, with the exception of the Elgin area, the three lower categories all show a loss. However, it is possible at the same time to compare the position in Aberdeen and Elgin, where trends are generally better than the average for the whole area, with changes in Banff and Buchan, where there have been heavy losses in the smaller nucleated settlements and only very slight expansion in the main towns. The regional component in the regrouping of population is once again demonstrated, but it is also clear that the smaller settlements everywhere—and the dispersed population especially—are seeing quite rapid change.

5.16. These changes are a reflection of the important shifts in the economic structure of the region. The total numbers employed have

⁽¹⁾ In Map 5.3 1966 figures have been used where possible but they are not available for parishes, or for nucleated settlements which do not have burgh status. For some settlements no reliable 1951 figure is available and the trend cannot therefore be shown although in most cases an increase is certain.

⁽²⁾ The detailed population changes in all burghs and landward areas, over the 15-year period considered here, are set out in Appendix B Table B.2. It may be noted that comparable population figures for burghs are readily obtainable from published census material for 1951 and 1961. Problems arise however for non-burghal settlements which are not listed individually in the census volumes. Figures for 1961 can however be obtained from the volume *Place Names and Population—Scotland* mentioned above (see p. 32, footnote 1), and for 1951 there certain information made available from the Registrar General for Scotland. There is, however, no guarantee that the same boundaries were taken for 1951 and 1961 calculations, and the earlier figures are based on estimates which make direct comparisons subject to some degree of error.

The Regrouping of Settlement: Some Planning Aspects

DAVID TURNOCK

6.1. It has been emphasized in Chapter 1 (on the basis of the analysis of later chapters) that a critical role at present and in the future will fall to Manufacturing since, with the possible exception of tourism, employment in the Service trades is unlikely to rise much if the employment in other industries continues to fall. It is essential therefore to examine the present distribution of economic activity and any constraints which might inhibit further expansion. Map 6.1 shows the structure of industry in different settlements in the North East. Since it deals with employment in factories and workshops certain Service industries, such as motor repairing and joinery, are inevitably included. However this method has the advantage of showing the economic situation of individual towns and villages as distinct from employment exchange areas (to which D.E.P. figures relate). It is clear that while the distribution shows considerable dispersion of activity a small number of major concentrations predominate. Thus 63% of total employment in factories and workshops, in the region, is in the Aberdeen City area alone; while another 31% is located in the burghs, especially Elgin, Lossiemouth, Fraserburgh and Peterhead which together account for almost a fifth of the total (see Table 6.1). This then leaves only 10% in the other 28 burghs and 7% in all non-burghal

settlements. It is also clear that the big undertakings, as a *sector basis*, are largely restricted to the main towns since most of the smaller centres have a very varied industrial structure with many branches represented in a small way.⁽¹⁾ There are important exceptions however, such as the British Rail Locomotive Workshops at Inverurie, Baxter's food processing plant at Fochabers, British Lighting Industries at Buckie and textile industries at Huntly and Keith.

6.2. Alongside these figures it is interesting to consider the employment in certain categories of Services for which information is available on an individual settlement basis. Map 6.1 shows the distribution of employment in local and national government offices and also on the premises of nationalised industries, principally British Rail and the Forestry Commission. Compared with the distribution of industry considerably more concentration is evident, most of the smallest groupings representing

⁽¹⁾ In the case of settlements where the small numbers employed in certain sectors cannot be shown effectively on Map 6.1 they are grouped into a 'miscellaneous' category. This convention has been used for the smallest settlements shown and also is towns or sectors which account for less than about 10% of the total.

TABLE 6.1
*Employment in Factories and Workshops and Public Offices
in North-East Scotland⁽¹⁾*

Settlement Group	Factories and workshops		Offices of public bodies ⁽²⁾	
	Employment thousands	Per cent of total	Employment thousands	Per cent of total
Aberdeen City	28.26	63.0	6.10	70.0
Burghs	13.54	30.3	2.14	25.0
Elgin/Lossiemouth . .	1.87	4.5	0.55	7.0
Fraserburgh	3.50	8.0	0.17	2.0
Peterhead	2.75	7.0	0.29	3.5
Other Settlements . . .	5.09	6.5	0.43	5.0
Total	44.89	100.0	8.69	100.0

⁽¹⁾ This table is based on information supplied by H.M. Inspector of Factories. The Inspector's figures are compiled over a cycle of four years.

⁽²⁾ Including offices of local and national government, of the public corporations, and of other public agencies.

simply railway stations or Forestry Commission District Offices. The main features are summarised in Table 6.1 showing that 70% of the jobs are in Aberdeen compared with 25% in the burghs and only 5% in other settlements. Of the 25% in the burghs however, half are located in Elgin/Lossiemouth, Fraserburgh and Peterhead; but in this line Elgin stands out compared with Fraserburgh and Peterhead which have higher percentages of factory employment.

6.3. Taken as a whole Map 6.1 illustrates the critical roles played by Aberdeen and the three largest burghs. But taking each as a possible regional centre for a major industrial grouping it is evident that Fraserburgh and Peterhead, though very substantial in the North-Eastern context, are essentially individual centres almost completely unsupported by subsidiary centres in their hinterlands. Aberdeen however is linked with a lower Donside con-

stances from Aberdeen or Elgin, have lost more than they have gained. Thus Huntly has lost its foundry business and part of its textile and hosiery industry and these, together with the closures in the distributive trades due to increasing centralisation, largely account for Huntly's declining population in the present century. It is possible however to get some indication of the impact of new economic activities by measuring the amount of land actually developed for 'industry'⁽¹⁾ in different places and Map 6.2 attempts to show the extent of development between 1945 and 1968, and also the distribution currently scheduled for industry under the various county and City development plans.

6.5. Some 450 acres have been developed in the region since 1945 and just over 1,000 acres are currently scheduled for industry (see Table 6.2). It is clear however that the two distributions have considerable differences of emphasis.

TABLE 6.2
Industrial Development of Land in North-East Scotland, 1945-68

	Acreage of land developed by industry in the post-war period:						Acreage of land scheduled for industrial development:	
	1945-1959		1960-1968		Total			
	No.	%	No.	%	No.	%	No.	%
Aberdeen City Area ⁽¹⁾	99	59	124	42	223	49	940	30
Elgin, Fraserburgh and Peterhead Area ⁽²⁾	47	28	83	29	130	29	130	12
Remainder of the study area	22	13	84	29	106	22	656	58
Total	168	100	291	100	459	100	1126	100

⁽¹⁾ This includes developments in Aberdeen City, Bridge of Don, Bucksburn, Dyce, Nigg and Peterhead.

⁽²⁾ Elgin includes Burghhead, Fochabers, Lossiemouth and Finfield.

Source: Local Planning Authorities.

centration in which Inverurie is an important element; while Elgin, though in itself no larger than Peterhead or Fraserburgh, is the centre for the Speyside distilling industry, with Bockie, Fochabers, Forbes, Keith and Lossiemouth also close to it. All of these, of course, contribute to its signal importance as a Service centre. Outside these four areas it is clear that industry is very feebly developed.

6.4. The pattern of Manufacturing is gradually changing and important swings have affected individual sectors more than the statistics of total numbers employed would suggest. The overall figures also obscure changing spatial patterns since contraction in certain towns has been balanced by expansion in others. We have no comprehensive figures to show the geography of losses of jobs in Manufacturing in recent decades; but it is likely that most small burghs, especially those at considerable dis-

Whereas only 29% of the scheduled land lies in the Aberdeen area practically half the actual post-war developments have taken place there. Again, whereas only 13% of the total land at present zoned for industry lies in the Elgin, Fraserburgh and Peterhead areas their share in the actual development is more than double this figure.⁽³⁾ This leaves the whole of the remainder of the study area with 58% of the land at present zoned for industry but only 22% of the area so far developed. A further point emerges from comparisons of development in the earlier and later post-war periods, that is, 1945-1959 and 1960-1968: it appears that overall, 75%

⁽³⁾ In this context 'industry' is a synonym for any use of land other than for housing, recreation or communications.

⁽⁴⁾ Of the 130 acres developed in Elgin, Fraserburgh and Peterhead areas 12 acres were in Fraserburgh, 20 in Peterhead and the rest in Elgin and nearby towns.

more land was used in the last eight years than over the previous fifteen, and an accelerating pace of activity is therefore implied. Moreover the distribution pattern appears to be widening somewhat since whereas the Aberdeen area accounted for 59% of the total land developed between 1945 and 1959, the proportion fell to 42% between 1960 and 1968. Comparable figures for Elgin, Fraserburgh and Peterhead together were 28 and 29 respectively. This means that other areas in the North East have improved their position considerably, having taken nearly a third of the development in the last eight years compared with only 13% before.

6.6. It must be stressed however that the area of land developed is no measure of the numbers of new jobs created. Much of the acreage developed at any place is taken by local firms, among which the Service trades predominate and which are anxious to secure more spacious premises. Thus, for example, almost all the land and buildings belonging to former defence establishments at Grantown-on-Spey and Pinefield (Elgin) have been allocated to this category of user and very significant proportions elsewhere. It must also be stressed that the actual area of land presently zoned for industry in any place is rather an academic matter in itself; with the exception of Aberdeen City it does not indicate the full capacity for industrial growth in any town since each planning authority has its own ideas about how much land it is appropriate to zone in advance of actual demands. The large acreages set aside at Drumoak and Slains in Aberdeenshire were originally zoned in response to enquiries from prospective developers and there is no likelihood of growth there in the foreseeable future. Again, there is nothing to prevent would-be developers from applying for planning permission to build in areas not scheduled in development plans, as shown by the perfume factory at Banchory and the new distilleries in Banff and Moray. Given the policy framework the final choice over location will always rest in greater or less degree with the individual firm; but planning can influence such decisions by ensuring that provision for development is made at all appropriate places. In this connection the provision of necessary services, of associated housing development and, whenever possible, the building of advance factories, are especially important. This implies that in areas of great potential, but which are controlled at present by several local authorities, a co-ordinated approach is essential.

6.7. Both Tables 6.1 and 6.2 suggest a high level of concentration of industrial activity. Many factors contribute to this concentration and make any significant future reversal of the trend unlikely. In examining these however it appears first of all that the availability of land is not particularly significant. It is true that the best sites for development are often limited in size if level, sheltered and well-drained land is needed, and that in the upland zone extensive areas may be difficult to find. Thus the Speyside distilling industry with its relatively small units of production can use limited sites on valley

floors or benches which would be inadequate for the larger concern. However small or medium-sized factories could easily be accommodated in the upland area, while in the lowlands there is really unlimited land which could be developed if the need arose. Put another way it could be said that while concentrations of the size of Aberdeen or even Elgin could not be accommodated on the limited or exposed sites of many parts of the North East, there is no lack of land in any town likely to be considered for major development. Planning factors other than land availability are likely to impinge more decisively on location matters.

6.8. Actually, physical planning factors are rarely critical in the North East, and apart from large water-using industries a wide range of manufacturing could be accommodated in most towns provided adequate time was allowed to extend the capacity of water supplies. The water supplies in the North East have been dealt with in the final report of the Scottish Water Advisory Committee⁽¹⁾ and the pattern is summarised in Map 6.3. On the whole there appears to be a considerable surplus available over and above normal requirements, although at the moment there is relatively little in hand in Aberdeen City and County (see Table 6.3).

TABLE 6.3
Water Supply and Consumption in North-East Scotland
million gallons per day

Sources in:	Available yield	Average consumption
Aberdeen City . . .	15.00	13.76
Aberdeen County . . .	6.82	6.26
Banff County . . .	3.68	2.44
Kincairdine County . . .	1.93	1.10
Moray and Nairn . . .	4.70	3.95
Total . . .	32.23	27.51

The situation is complicated by the proliferation of small local undertakings and although these have now been merged to form the North East Scotland Water Board the pattern of numerous small separate schemes unconnected with regional schemes will disappear only slowly. Considerable progress has been made in the north west of our region where connections exist between the Forres, Laich of Moray and Nairn regional schemes. Further east Buckie, now drawing water from the Spey gravels, can augment the supplies of Findochty and Portknockie; and Banff and Macduff have established a Lower Deveron Water Board to provide each burgh with bulk supplies from the Deveron gravel beds near Alvah. In Kincairdine the

(1) S.D.D., *The Water Service in Scotland* (H.M.S.O., 1966), Cmd. 3116.

population. It is certain however that the regrouping of the existing population will continue to emphasize the present major growth areas, especially Aberdeen and Elgin. The arguments in favour of special emphasis on these key centres have already been discussed in Chapter 3.

Conclusions

- 6.17. (i) What detailed evidence of industrial distribution can be obtained points to a high degree of concentration in the main towns especially those in certain parts of the region—Aberdeen and Elgin together with parts of Buchan.
- (ii) Surveys of recent development of new sites by industry reveals a continuing tendency to concentrate, although the smaller towns have tended to gain a greater share of the total development in recent years.
- (iii) Water supplies and drainage capacity ought not (in themselves) to act as deterrents to growth anywhere. Pending the completion of certain regional water schemes short-term difficulties may exist in some places.
- (iv) Studies of servicing areas and labour catchments bring out the dominating position of Aberdeen City. Elgin, Fraserburgh and Peterhead are clearly the main sub-regional centres with Elgin in the most advantageous position.
- (v) Land availability cannot be considered as a real problem in the growth of industry in the North East.

Population: Trends and Projections

GERALD POPPLESTONE

Introduction

7.1. The population of the North East has been falling steadily since 1950 as a result of the high migration from the area, and in spite of high rates of natural increase. Table 7.1 shows the trend of the regional population since 1901 and compares it with the population changes in the whole of Scotland. This chapter will, first, discuss the main features and trends of the North-East population. Secondly, it will present a number of projections of the regional population on varying assumptions, chiefly of migration rates. Where relevant it will relate its findings to the potential, as well as the stated, policy aims for the region.

I. Main Demographic Features and Trends

7.2. Table 7.2 shows the relative population change of each of the planning regions in Scotland between 1951 and 1966. The North East has a declining share of Scotland's population; in 1966 it accounted for less than 9% of the total. This is because net migration from the region is particularly high and more than offsets the high rate of natural increase. Broadly, the central (and urban) regions of Scotland have high rates of natural increase, and the outer regions have high migration losses, although Glasgow is conspicuous in having much the highest rates of natural increase and net migration. Rates of migration have been higher in the sixties than in the fifties in some regions, but in the North East, at least, the average rate has an apparent stability.

Present Population Structure

7.3. The future population of the region relative to the rest of Scotland partly depends on the local age and sex structure of the present population, since this will determine the rates of natural increase, and partly on future trends in migration. Table 7.3 compares the age and sex variations of the region with the rest of Scotland. The North East has an older population relative to Scotland with a slightly lower proportion of children and more old people, particularly in the rural areas. Both the

distribution of young people between 15 and 24 and the male-female ratio are similar to that for Scotland, although the latter ratio for Aberdeen City (0.839) is significantly lower than the Scottish ratio (0.919).

7.4. This means, then, that the future size of the region's population presents further possibilities of decline relative to that of Scotland, since the relative decline of the young adult population will tend to lower the rates of natural increase. The distribution of population within the region will also change. At present there are more young females in Aberdeen City and fewer in the rural areas, and more young males in Moray and Kincardineshire, in the former case presumably because of the concentration of service personnel. Also, Nairn has a markedly older population, with relatively few of its population in the age group 25 to 44. This is probably accounted for by the popularity of the Moray Firth with retired people.

Birth, Death and Migration Rates

7.5. The slightly lower rate of natural increase in the region compared with the Scottish average needs further analysis. If we 'standardise'⁽¹⁾ the average birth rates for age and sex for each of the counties between 1961 and 1965, and calculate a weighted average using weights based on the Registrar General's annual estimate of population for each county, we obtain an average birth rate for the region of 18.2 per 1,000 population. This compared with the Scottish average of 19.7 per 1,000. Thus, the 'true' (i.e. standardised) birth rate is considerably lower for the North East (and the rate for Aberdeen City is lower than for the rest of the region). The average death rates similarly standardised were compared and show a slightly higher rate for the region than for Scotland as a whole.

⁽¹⁾ That is births per 1,000 females of each 5 year age group are averaged for each county, and these standardised birth rates are averaged for the region after weighting each of them with the relative share of the total population in each county. Broadly this means that the average (crude) birth rate for the region is adjusted to iron out the effects of different numbers of people of both sexes in the various age groups, compared with national figures.

TABLE 7.1
Population Change, North-East Scotland 1901-66⁽¹⁾
Thousands

	1901	1911	1921	1931	1951	1961	1966	Relative Change 1966 as a per cent of 1901
Aberdeen City .	153.5	163.9	159.0	167.3	183.2	184.8	183.5	120
Aberdeen County .	160.3	159.7	153.4	145.4	143.9	137.0	135.5	85
Barry County .	61.5	61.4	57.3	55.2	50.0	47.0	44.9	73
Kincardine County	31.6	29.6	30.4	27.4	26.0	25.7	25.3	80
Maray County .	44.8	43.4	41.6	40.7	48.5	49.9	51.1	114
Nairn County .	9.3	9.3	8.8	8.2	8.6	8.4	8.2	88
Total North East .	460.9	467.3	450.4	444.1	482.3	482.9	448.5	97
Scotland .	4,472.1	4,760.9	4,882.5	4,848.0	5,096.4	5,179.3	5,190.8	116

⁽¹⁾ 1901 to 1921 are Census figures of the *enumerated* population; 1931 to 1951 are Census figures of the *resident* population; 1966 figures are the Registrar General for Scotland's mid-year estimates. It is considered that this particular selection gives the best run of comparative figures. But it should be noted that the figures relate to areas as defined at each date, and their comparability between years is to some extent affected by boundary changes.

TABLE 7.2
Natural Increase and Net Migration for Scottish Planning Regions, 1951-66

1	2	3	4	5	6	7	8	9
Planning Region	Total population 1951 thousands	1951 per cent of total	Natural increase 1951-61 as a percentage of 1951 popn.	Net migration 1951-61 as a percentage of 1951 popn.	Col. 4 Col. 5	Adjusted natural increase 1951-66 as a percentage of 1961 popn. ⁽¹⁾	Adjusted net migration 1951-66 as a percentage of 1961 popn. ⁽²⁾	Col. 7 Col. 8
Glasgow .	2,439.0	48.2	7.9	-5.9	1.3	8.9	-10.6	0.8
Falkirk/Stirling	223.2	4.3	7.0	-2.4	2.9	8.3	+6.9	— ⁽³⁾
Edinburgh .	975.3	18.0	6.2	-3.5	1.8	7.1	-4.5	1.6
Thyvalde .	456.3	8.8	4.3	-4.6	0.9	4.9	-6.1	0.8
Borders .	113.1	2.2	0.8	-7.2	0.1	0.8	-5.3	0.2
South West .	155.0	3.0	5.8	-6.7	0.9	5.9	-6.8	0.9
North East .	468.2	9.1	5.9	-8.7	0.7	6.1	-8.7	0.7
Highlands .	288.9	5.6	2.4	-5.6	0.4	3.6	-5.7	1.0
Scotland .	5,169.0	100.0	6.6	-5.5	1.2	-5.5	-7.2	0.8

⁽¹⁾ Here the natural increase, 1951-66, has been multiplied by two, and shown as a percentage of the 1961 population.

⁽²⁾ In this case the net migration, 1951-66, has been multiplied by two and shown as a percentage of the 1961 population.

⁽³⁾ Not calculated because of the positive sign of the net migration figure.

Source: R.G.S., mid-year estimates.

TABLE 7.3
Population Structure by Age and Sex: North-East Counties and Scotland
per cent of total

Age range	Scotland			North East			Aberdeen City			Aberdeen County			Banff			Kincardine			Moray			Nairn		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0-14	27.6	24.2	25.9	26.0	22.9	24.4	20.0	21.6	20.8	25.5	23.7	24.6	25.9	24.7	25.0	25.4	23.6	24.4	27.6	25.0	26.3	28.3	10.7	21.4
15-24	15.1	13.8	14.4	15.1	13.7	14.3	13.7	14.7	15.2	14.1	13.8	13.9	14.7	11.3	13.1	16.0	12.9	14.4	13.8	11.8	13.8	13.4	11.0	12.2
25-44	23.0	24.2	24.6	25.0	24.0	24.5	25.1	24.1	24.6	24.0	23.4	24.1	23.9	23.4	23.6	24.2	24.6	24.4	27.4	25.7	26.3	30.2	19.9	20.0
45-64	23.4	24.4	23.9	23.9	24.8	24.4	24.3	25.1	24.0	24.4	23.0	24.7	23.9	23.3	24.7	24.0	23.9	23.4	20.4	23.3	21.9	20.9	27.1	27.0
65+	9.0	13.4	11.3	10.0	14.6	12.4	9.7	14.4	11.0	11.2	14.1	12.7	11.3	14.9	13.3	10.5	15.0	13.4	8.9	14.1	11.3	15.1	23.3	19.4
	100.1	100.0	100.0	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.1	100.0	100.0	100.1	99.9	100.0	100.1	100.0	100.0

Source: 1966 Sample Census.

TABLE 7.4
Standardised Average Birth
Rates, 1961-65: North East
and Scotland
per thousand population

	North East	Scotland
1961	18.0	19.5
1962	18.5	20.1
1963	18.4	19.7
1964	18.1	20.0
1965	18.1	19.3
Average	18.2	19.7

7.6. Accurate migration rates are impossible to compute because of the paucity of data, but the statistics of the National Health Service Register (i.e. changes of doctor) do throw some light on movements of population within the United Kingdom. According to these records, the net loss of persons from Scotland to the rest of the U.K., in 1965-66, was 22,000 (or 4.231 per 1,000); this compared with a figure for the North East of about 2,000 (or 4.996 per 1,000). Thus, this segment of migration from the North East is comparatively larger than from Scotland generally.

7.7. It is impossible to give a figure of net migration overseas from the region which has any claim to accuracy; the *estimated* figure for overseas migration from all Scotland would suggest that the North East may be losing at least 2,000 people per annum overseas.

7.8. The Census provides information on migration patterns within Scotland.⁽¹⁾ If one analyses these movements and compares them between the eight planning regions it emerges that what the Census defines as 'in-migration' is low in the North East compared with other regions and consists mainly of in-migrants from other parts of the region. Out-migration on the other hand, is high, being exceeded only by out-migration rates in the Borders and Highland planning regions. These figures, it should be noted, exclude overseas migration: reliable information on the numbers of people migrating abroad, from each region, is not available.

7.9. Finally, Table 7.1 shows the trend of population growth in, and movement towards, Aberdeen City since 1901. It is difficult to be more precise about the trends here because of boundary changes during that period,⁽²⁾ but the City's growth of population by 20%, since 1901, compares with a decline in population for the region as a whole of 5%.

Migration Characteristics

7.10. The most variable part of any population projection is the estimated future rate of migration into and out of the region. Not only is migration a complex of movements in different directions, but little information is available to help in predicting the size, direction and amount of change in the streams of migration in the future. Also, the influence of the future industrial development of a region on its net migration is uncertain.

7.11. An analysis of migration between the region and the United Kingdom, compared with the rest of Scotland (see Table 7.5), shows that the North East has higher proportionate losses through migration than other parts of Scotland and that this is accounted for by a higher rate of out-migration as well as a lower rate of in-migration. This is in contrast with Scottish migration as a whole as analysed by a recent study.⁽³⁾ This showed that migration loss from Scotland can be attributed mainly to a lower rate of in-migration than that for other regions in the United Kingdom; out-migration for Scotland as a whole is no higher, proportionately, than for other comparable regions. This means that relatively the North East both loses more and attracts fewer migrants than other parts of Scotland.

IN-MIGRATION

7.12. In general, two-fifths of what the Census defines as the region's in-migrants are local migrants from other parts of the North East; a further quarter come from the rest of Scotland, a fifth from the rest of Britain, and an eighth from abroad. The bulk of migrants to Aberdeen County, Banff and Kincardine are local, although the relative size of this group is declining.

7.13. Just over one-third of all people migrating to the North East from elsewhere go to Aberdeen City, though a somewhat smaller proportion of local migrants do so. However, a more realistic picture of City-wards migration is gained by regarding the migration stream as a two-stage process consisting of migrants who move to the City to work but actually settle in

⁽¹⁾ The Census defines migrants as follows—

- Admigrant: a person whose usual address at census was different from his address one year before census (five year migrant: a person whose usual address at census was different from his address five years before census).
- Inmigrant: a migrant resident in that area at census date but resident outside that area at the previous reference date (one or five years before). In this Report the term 'in-migrant' is preferred to 'immigrant' and is used in its place.
- Emigrant: a migrant who was resident in an area in Scotland at the previous (one or five year) reference date, but was resident in another area within Great Britain at the time of the census. Again, we prefer the term 'out-migrant' to 'emigrant'.

The term 'area' is to be interpreted in the appropriate context: it may mean an area within the North East; or it may mean Scotland as a whole. In relation to Census figures it cannot be interpreted as meaning the North-East region as we define it since 'North-East Scotland', as defined for Census purposes, differs from our survey area.

⁽²⁾ Table 2.2, p. 15, shows the population changes in the City and the immediately adjacent areas between 1951 and 1966.

⁽³⁾ *Emigration and Immigration: The Scottish Situation*. Scottish Council (Development and Industry) 1967. This study concluded that emigration of workers from Scotland to other parts of Britain is no greater (relative to the total insured employees of Scotland) than emigration from other regions. But immigration of workers into Scotland from other parts of Britain is considerably lower than for the other regions. Net migration is high, not because emigration itself is high, but because immigration is low.

TABLE 7.5
Migration: Scotland and the North East:
National Health Service Register Movements, 1961-66

Scotland		North East	
From		From	
United Kingdom to Scotland	204,941	United Kingdom to North East	19,338
To		To	
United Kingdom from Scotland	314,278	United Kingdom from North East	29,812
Net Migration lost to U.K.	109,337	Net Migration lost to U.K.	10,474
	(4.23% p.a.)		(4.70% p.a.)

TABLE 7.6
Birthplace of Residents of North-East Scotland, 1931-61
per cent of total residents

	1931	1951	1961
	%	%	%
<i>N.E. Region</i>			
Aberdeen City	26.58	29.40	31.52
Aberdeen County	55.78	51.85	30.32
Banff	13.02	11.19	10.63
Kincairdine	4.71	4.15	3.42
Moray	7.41	7.17	6.96
Nairn	1.16	1.15	1.07
	88.66	84.92	83.92
Other Scottish Cities	2.59	3.04	3.05
Northern Counties ⁽¹⁾	2.10	2.05	2.35
Rest of Scotland	3.45	4.42	4.47
	96.61	94.43	93.78
Total Scotland	96.61	94.43	93.78
Rest of U.K.	2.35	3.98	4.47
Overseas	0.84	1.59	1.75
	3.19	5.57	6.22
Outside Scotland	3.19	5.57	6.22
	100.00	100.00	100.00

⁽¹⁾ Caithness, Inverness, Orkney, Ross and Cromarty, Sutherland and Zetland.

Source: Censuses, 1931, 1951 and 1961.

TABLE 7.7
Present Residence of N.E. Residents Born in the Region
per cent of total category

Present Residence \ Birthplace	Aberdeen City	Aberdeen County	Banff	Kincairdine	Moray	Nairn
	%	%	%	%	%	%
Aberdeen City	85.9	9.9	1.2	2.0	0.9	0.1
Aberdeen County	18.2	71.1	4.1	4.5	1.9	0.2
Banff	10.5	12.4	86.1	1.1	9.8	0.5
Kincairdine	19.8	14.2	1.3	63.3	1.3	0.2
Moray	5.3	3.7	5.6	0.6	81.3	3.0
Nairn	3.3	2.7	1.8	0.4	14.2	77.4

Source: Census, 1961.

the villages surrounding the City and migrants from the City who also move to the new housing outside the City boundaries. This would then account for more than 50% of all local migrants and indicates a very strong rural-urban-suburban stream towards and around Aberdeen City.

7.14. Table 7.7 indicates that residents of the North East who were born in Aberdeen City are least likely to move to other parts of the region, and that the City attracts mainly people born in the counties surrounding it. The migration patterns of Moray and Nairn are quite distinct from the rest of the North East. Not only do most of the Moray-born people still living in the North East remain where they were born, but also Moray receives a heavy proportion of migrants from the rest of Britain and abroad, these consisting mainly of Forces families. Most of Nairn's in-migrants come from the area north of the county.

7.15. The decline in the importance of Aberdeen City as a reception point for rural migrants from the North of Scotland has already been documented.⁽¹⁾ In 1961, for example 84% of the City's residents were locally born compared with 88% in 1931. This decline has been accompanied by a slight rise in migrants born in the other Scottish cities and elsewhere in Scotland. Over the same thirty-year period the proportion of the City's population who had been born in England and Wales rose from 2.6% to 4.5%. This suggests that the trend in in-migration is towards the city-to-city migration patterns already prevalent in the rest of Britain. Even so, the North East is still characterised by greater stability of its population than elsewhere in Scotland, and there is still relatively little migration from the City to the central urban belt of Scotland. The most striking change in in-migration between 1961 and 1966 has been its rapid increase, especially a 50% rise of local migration within the region and a 60% increase in migrants coming from abroad.

7.16. An analysis of the socio-economic status of in-migrants in the region reveals the preponderance of three groups among in-migrants: short-distance migrants are mainly 'intermediate non-manual' workers (who include teachers, nurses and supervisory clerical staff), whereas among long-distance migrants, professional groups and people serving in the Armed Forces predominate. Skilled and unskilled manual workers are under-represented among Aberdeen County in-migrants, as are farmers (those who are employers) and managers among Banff in-migrants.

7.17. Professional groups are clearly the most mobile: the proportion of them among Aberdeen in-migrants is three times as high as in the rest of the population. For these people migration is frequently built into the structure of their careers; they achieve promotion by moving between branches of the same firm, or from one organisation to another.⁽²⁾ Next in the hierarchy of mobility are the highly skilled manual

workers, especially mechanics, fitters and electricians: this type of migration corresponds closely with the shorter-distance, rural-urban migration streams, both within the region and to the North East from further north.

OUT-MIGRATION

7.18. The 1966 Census data on migration gives for the first time an analysis of migration within the whole of Great Britain so that it is now possible to analyse out-migration to the rest of Scotland and to England and Wales. This is shown in Table 7.8. Although these figures are deficient in that they do not give any indication of movement abroad or to Northern Ireland, they do establish that more people migrate from the City to other parts of Scotland outside the region, than is the case from elsewhere in the North East. But when these numbers of out-migrants are compared with the size of the population of each of the counties, the importance of the City as a spring-board for further migration away from the region is much less pronounced. Moray sends a higher proportion of its out-migrants to England and Wales than do other parts of the region (though no doubt the Forces element is important here). Kincardineshire, on the other hand, which has a high proportion of migrants by Census figures, probably loses many of these to the nearby Tayside region.

7.19. The study of migration characteristics already quoted⁽³⁾ provides information on the motivations of out-migrants. From this it is clear that Aberdeen is predominantly a city receiving a population from the rural north and exporting population either to the urban centres of England, or abroad. The study also shows a marked difference in the destinations of native Aberdonians compared with the rural in-migrants who later leave the City. Natives who leave tend to travel longer distances and are more likely to leave Scotland, whereas when in-migrants leave the City they tend to return to the areas from which they came. Illsley's analysis of repeat migration shows that the rate of out-migration is closely tied to the rate of in-migration and that the group of in-migrants most likely to move out at a later date are those coming to Aberdeen from outside Scotland. This confirms much of the sociological literature on migration which links geographical mobility with social mobility.⁽⁴⁾

(1) 'The motivation and characteristics of internal migrants', by R. Illsley, A. Finlayson and B. Thompson—*Millbank Memorial Fund Quarterly*, July 1963, Vol. 41, No. 3. In that paper the 'North of Scotland' comprises the North East together with Inverness, Ross and Cromarty, Sutherland, Caithness, Orkney and Zetland.

(2) For some further discussion of this, see Appendix B.

(3) Illsley, Finlayson and Thompson, op. cit.

(4) Thus, the analysis of migration patterns in a region such as this is important not merely in providing information about the shortages of particular present employment opportunities, but in highlighting the future promotion opportunities which migrants are seeking when they consider whether or not to change jobs. This point is discussed further in Appendix BIII.

TABLE 7.8
Out-Migration from the North East, 1966

From:	1 year migrants				5 year migrants		
	To region	To rest of Scotland	To England and Wales	Migrants from region as % of population	To region	To rest of Scotland	To England and Wales
Aberdeen City . . .	2,040	2,280	1,690	2.16	4,850	5,510	5,820
Aberdeen County . . .	2,830	1,440	1,530	2.22	8,170	4,030	4,050
Barff	1,150	590	380	2.17	3,270	1,480	1,510
Kincardine	640	720	160	3.96	1,750	1,710	360
Moray	540	790	1,750	5.24	1,580	2,360	4,380
Nairn	160	130	90	2.78	420	660	220
Totals	7,590	5,950	5,600	2.60	20,040	16,350	17,140

Source: Sample Census, 1966, Migration Tables pt. 1, Table 7.

7.20. When out-migrants are classified by occupation the high rate of migration among university-trained and professionally-qualified workers contrasts sharply with that among men in managerial occupations, although within this latter group the migration rate is high for employees of large national organisations. Expectably, it is lowest for managers in peculiarly local industries such as fishing, fish handling and granite working, all of which require skills not sought elsewhere, or in small businesses with local roots. Similarly, with clerical workers it is the employees of large organisations—banks, insurance companies and the like—who are the most likely to move.

7.21. From the point of view of the growth potential of the region, the most significant group of out-migrants are the skilled mechanics, fitters and electricians. Their rate of migration is considerably higher than that of the remaining skilled manual workers. This seems to be a local phenomenon, probably attributable to the more attractive opportunities available in larger industrial centres in the south. They are largely Aberdonian in origin, rather than earlier in-migrants from the countryside, and are quite

distinct in their patterns of mobility from their more stable counterparts in, for example, the shipbuilding industry. Apart from engineers, the other mobile group of manual workers are those working in transport, especially railway transport. The lowest rate of out-migration occurs in the fishing industry.

II. The Future Population of the North East, and its Structure

7.22. Any projection of the future population is a hazardous exercise because of the number of variables in the situation. The projections that follow should not be regarded as accurate forecasts of the structure and size of the future population in the North East: the most that such projections can indicate is the trend of the future population if the very limiting assumptions on which they are based are in fact realised. Because of the uncertainties surrounding the future development of the region, there may be many deviations from the results of any of the projections presented. A major cause of this is the unpredictability of migration: this is

TABLE 7.9
Occupational and Industrial Differences in the Rate of Out-Migration from the North East⁽¹⁾

Occupational group	Total cases in group	Per cent of out-migrants in group	Occupational group	Total cases in group	Per cent of out-migrants in group
University students . . .	20	85	Railway workers . . .	48	19
Professional	72	54	Other non-manual . . .	94	18
Armed forces	70	49	Other skilled	254	13
Managerial	63	25	Road transport	173	12
Clerical workers	95	25	Other skilled engineers	60	10
Fitters and electricians . .	193	25	Fishing and fish handling	63	8
Shop assistants	54	19	Other semi-skilled and unskilled	246	1
				1,505	

⁽¹⁾ Halsey, Finlayson and Thompson, op. cit. Table 4, p. 136. These figures are based on a sample of 7,645 married women resident in Aberdeen City in the years 1951-59 and having their first baby in the City. Of these 1,505 had left the City with their families within five years of the birth of their first child. The occupational groups of the 1,505 husbands are analysed above.

especially sensitive to the future level of economic activity, and is, of course, of major significance in a region which is merely a small part of a much bigger unit. It is because of this that each projection estimates future population using differing rates of migration. Changes in the birth and death rates are given far less attention than changes in the migration rates in the projections, in order to highlight the effect of migration on the future population.⁽¹⁾ In general, the rates of natural increase in each projection are similar to what they were in 1961, it being assumed that fertility changes very little and that the number of children born is mainly a function of the number of child-bearing women in the population. For greater accuracy, the population is projected on the basis of its total rather than its resident population. "Total" population is defined to include all persons who are temporarily living away from home (for example, students and soldiers); we choose this definition since such people are likely to return home, have children, and thus contribute to the increase of the population.

Projection 1

7.23. The first projection is designed to demonstrate future developments should the 1961 levels of fertility, mortality and migration remain largely unchanged. It thus provides a standard with which the other projections can be compared. The assumptions are that both death and migration rates will remain the same as they were in 1961 until 1976. Birth rates, calculated from age-specific fertility rates, are

adjusted to equal total births in the region for 1961. The death rates are actual age specific deaths in the region for 1961. Migration rates are the net migration loss estimates for each age group for the region made by the Registrar General.

7.24. The projection (see Table 7.10) shows a general decline of 5% in the population of the region by 1976 and also predicts a marked redistribution of population between age groups. The main changes are a substantial rise in the age groups 20 to 30, and a heavy increase in population aged 60 and over. The former can be accounted for by the post-war bulge in the number of children born, while the increase in the proportion aged over 60 is due to the post-war decline in the death rate. The other age groups show a slight decline, the greatest of which is in the 35 to 40 age group. The balance between males and females is similar to what it was in 1966. It should be noted that this projection is not particularly realistic, especially in the light of the sharp rise in migration rates between 1961 and 1966. Also, the Registrar General estimates that, on recent trends in the death rate for Scotland, the rate will decline even further over the next forty years, by up to 50% in the age groups below 40, with a proportionately lower decline in higher age groups. The projections that follow take account of the effect of differing rates of migration and a declining death rate on the ensuing age structure of the population. They consider a variety of migration rates ranging from a 50% increase to a reduction to zero by 1976 (and alternatively 1981), to no migration at all between 1966 and 1976.

TABLE 7.10

Projection 1: Present Trends Continued⁽¹⁾
thousands

Age group	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	16.5	35.4	19.3	18.5	37.6	19.5	18.4	37.9
5-9	18.3	17.7	36.1	17.5	17.2	34.8	17.9	17.1	34.9
10-14	17.8	17.3	35.1	17.6	16.9	34.3	16.8	16.5	33.2
15-19	18.7	18.4	37.1	17.0	16.5	33.4	16.7	16.1	32.8
20-24	14.5	13.5	28.1	17.3	17.1	34.4	15.6	15.5	30.9
25-29	13.6	12.9	26.5	13.4	12.6	26.0	15.9	15.9	31.8
30-34	13.7	14.7	28.4	11.8	11.5	23.3	11.7	11.2	22.9
35-39	13.3	13.8	27.1	12.0	13.0	24.9	10.3	10.2	20.5
40-44	15.7	14.6	28.3	12.3	12.9	25.2	11.0	12.1	23.2
45-49	12.2	13.5	25.7	12.7	13.6	26.3	11.5	12.0	23.4
50-54	15.2	14.7	27.8	11.4	12.8	24.3	11.9	12.9	24.8
55-59	15.8	15.6	29.4	12.4	13.9	26.3	10.8	12.2	22.9
60-64	12.0	14.2	26.1	12.2	14.3	26.5	11.0	12.8	23.7
65-69	8.4	11.9	20.5	10.6	13.0	23.6	10.7	13.1	23.9
70-74	6.0	9.8	15.8	6.1	9.8	15.9	7.6	10.8	18.4
75+	6.8	12.8	19.7	5.1	13.4	19.6	6.0	14.2	20.1
All ages	215.0	233.4	448.4	209.6	225.9	435.5	204.8	220.6	425.4
Index 1966 = 100			100.0			97.5			94.8

⁽¹⁾ In this and all the succeeding tables of projections slight discrepancies between overall totals and totals of males and females are due to rounding.

Projection 2

7.25. This projection is the most optimistic estimate of the future population in that it assumes that there is no net migration loss between 1966 and 1976. Compared with Projection 1 this implies that the net migration loss between 1966 and 1976 will be lower by 48,500, while the total population of the region will be 50,000 higher in the latter year than in the first projection. The birth rate is assumed to be the same as in 1961, while death rates are adjusted to take into account the Registrar General's estimated decline over the next 40 years, already mentioned.

7.26. This projection (see Table 7.11) shows a total increase in population of 6%, or 27,000 by 1976 over the actual figure in 1966. Compared with Projection 1 it shows marked changes in the population structure caused by the decrease of out-migration among young people in the region, particularly those who are still completing their families. There is thus a noticeable increase in the proportion of males in the age ranges 0 to 14 and 20 to 29, a slight increase in the groups up to age 39, and 45 to 55, and a sharp increase of 34% in those aged 65 to 74. These increases are matched by similar increases in the proportion of females of each age group, except for the heavy increase of 42% of females aged 25 and 29. There is also an 8% decline in the proportion of females aged 30 to 39.

7.27. The age structure of this projection in 1976 can, in general, be regarded as relatively less healthy than it was in 1966. There will be proportionately fewer males between the ages of 5 and 15, and 25 and 60, and more males between the ages of 15 and 25, and 60 to 70. Similarly, there will be fewer females aged 5 to

25, and 30 to 60, and more between the ages of 20 and 30, and over 60. This projected population can be regarded as healthy in one respect, namely that there are more children up to 5, which would suggest that the balance between the age groups would improve after 1976.

Projection 3

7.28. In this projection, as in Projections 1 and 2, the birth rate is based on the fertility rates of 1961, and the death rates are again assumed to decline as predicted by the Registrar General. The projection also assumes an increase in migration over the rates for 1961: the specific migration rate has been increased by 50% to give a total net loss by migration of 64,000 in the ten-year period 1966-76, compared with 43,000 in Projection 1.

7.29. The projection (see Table 7.12) shows a 9% decline in the overall size of the population in 1976 compared with 1966, compared with the 6% increase under Projection 2, though a comparison of the natural increases on both projections shows an absolute decline of only 3,800. The estimated changes in the age/sex structure of Projection 3 reveal the post-war bulge in the 20 to 29 year age group in 1976, and an increase in population aged over 60. The biggest increase is in the numbers of females aged over 65. Apart from these differences, the balance between males and females in each age group remains as it was in 1966. In general, however, the age structure becomes very unbalanced. It is true that there is a higher proportion of young people up to the age of 15 and also between the ages of 20 and 30; but there is a serious imbalance after the age of 30.

TABLE 7.11
Projection 2: No Migration⁽¹⁾
Thousands

Age group	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	18.5	37.4	19.3	18.8	37.6	21.1	20.0	41.1
5-9	18.3	17.7	36.1	18.5	18.2	36.7	18.9	18.0	36.9
10-14	17.8	17.3	35.1	18.8	17.7	36.0	18.5	18.2	36.7
15-19	16.7	16.4	33.1	17.6	17.3	35.1	18.3	17.7	36.0
20-24	14.5	13.5	28.1	18.7	18.4	37.0	17.7	17.3	35.0
25-29	13.6	12.9	26.5	14.3	13.5	28.0	18.6	18.3	36.9
30-34	15.7	14.6	30.4	13.5	12.9	26.4	14.4	13.5	27.9
35-39	13.3	13.6	27.1	13.7	14.6	28.2	13.4	12.9	26.3
40-44	13.7	14.6	28.3	13.2	13.7	26.9	13.5	14.3	27.8
45-49	12.2	13.5	25.7	13.6	14.4	28.0	13.1	13.6	26.6
50-54	13.2	14.7	27.9	11.8	15.3	25.1	13.2	14.2	27.4
55-59	13.8	15.6	29.4	12.8	14.4	27.2	11.6	13.1	24.5
60-64	12.0	14.2	26.1	12.5	14.8	27.2	11.6	13.6	25.2
65-69	8.4	11.9	20.3	10.8	13.4	24.3	11.3	14.0	25.3
70-74	6.0	9.3	15.3	6.3	10.2	16.5	8.1	11.5	19.6
75+	6.8	12.9	19.7	6.4	14.1	20.6	6.5	15.5	22.1
All ages	213.0	233.4	446.4	221.6	239.2	460.9	229.3	245.9	475.6
Index 1966 = 100			100.0			102.7			106.1

⁽¹⁾ See Table 7.10, note 1.

In 1976, on these assumptions, 31% of the male population will be between the age of 30 and 60, compared with 37% in 1966; and there is a change of similar order and direction in the proportion of females. Again, there is the marked increase in the proportion of people aged 60 and over. Such a population structure is seriously unbalanced in that not only is there a large deficiency of men of working age but also a declining proportion of women of child-bearing age; such a future population would tend to show a sharp decrease in the number of children born between 1976 and 1986, with the further consequence of a marked aging of the population.

7.30. Nevertheless, this projection is by no means unrealistic in the light of the increase in the rate of migration from the North East between 1961 and 1966. If we cannot stem this

of 1961, while the rates for 1971-76 are one third of the 1961 rates. It is further assumed that the age-specific rates of in-migration and out-migration are similar; thus the two streams of migration in themselves produce no change in the age structure of the population.

7.32. The projection (see Table 7.13) predicts an increase of population in 1976 of 3,400 or 7½% compared with its actual size in 1966. This results in some redistribution between the age groups with a slight increase of young people up to age 10, a slight decrease in the next ten years, and a more marked increase of population aged 25 to 35 (this represents the post-war bulge). The population aged 35 to 70 shows a marked relative decrease, whereas there is an increase in the population aged over 70. The patterns of the redistribution in the age structure

TABLE 7.12
Projection 3: 50 Per Cent Increase in Migration⁽¹⁾
(thousands)

Age group	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	18.4	37.4	19.3	18.3	37.6	18.7	17.7	36.4
5-9	18.3	17.7	36.1	17.2	17.0	34.2	17.6	16.8	34.4
10-14	17.6	17.3	35.1	17.2	16.5	33.7	16.2	15.8	32.0
15-19	18.7	18.4	37.1	16.6	16.1	32.7	16.0	5.5	31.4
20-24	14.5	13.5	28.1	16.6	16.5	33.1	14.6	14.4	29.0
25-29	13.6	12.9	26.5	12.9	12.2	25.1	14.7	14.8	29.4
30-34	15.7	14.6	30.4	11.0	10.8	21.8	10.5	10.1	20.6
35-39	13.3	13.8	27.1	11.2	12.2	23.3	8.9	9.0	17.9
40-44	13.7	14.6	28.3	11.9	12.5	24.4	10.0	11.1	21.0
45-49	12.2	13.5	25.7	12.2	13.2	25.5	10.6	11.4	22.0
50-54	13.2	14.7	27.8	11.3	12.7	24.0	11.4	12.4	23.8
55-59	13.8	13.6	27.4	12.3	13.7	26.0	10.6	11.9	22.5
60-64	12.0	14.2	26.1	12.2	14.8	26.5	10.9	12.6	23.5
65-69	8.4	11.9	20.3	10.6	13.0	23.6	10.8	13.1	23.9
70-74	6.0	9.3	15.4	6.1	9.9	16.0	7.7	10.8	18.5
75+	6.8	12.9	19.7	6.2	13.8	20.0	6.1	14.8	20.9
All ages	215.0	233.4	448.4	204.9	222.7	427.6	195.3	211.9	407.2
Index 1966 = 100			100.0			95.4			90.8

⁽¹⁾ See Table 7.30, note 1.

rapid rise in net migration within the next ten years, we may expect the structure of the population in 1976 to be similar to that estimated in Projection 3. The remaining projections consider the likely age structure of the population in 1976 and, in two cases, 1981, assuming regional policy to achieve varying measures of success in reducing net migration loss.

Projection 4

7.31. This projection assumes the same rates of natural increase and the same death rates as before, but the net migration loss is assumed to fall to zero by 1976. This is brought about by a decline of a third in the 1961 rate of net migration in each 5 year period between 1966 and 1976: that is, the migration rates assumed for 1966-71 are two thirds of the age-specific rates

are similar for males and for females, except that in 1976 women aged over 65 will show some relative increase. Although the slight increase of young people aged up to 10 and the more marked increase of young people between the ages of 20 and 30 would suggest a healthy population structure, the overall distribution of age groups within the structure can be regarded as a clear deterioration in the structural balance over that of 1966. It can, of course, be argued that this projection is unrealistic on the grounds that it is unlikely—unless very urgent and effective action is taken—that migration will fall so markedly, yet it underlines the need for such action since it shows that even with a phased reduction of migration, harmful effects on the population structure will ensue. For not only has the decline in migration failed markedly to affect the age structure of working men in the

TABLE 7.13
Projection 4: Migration Reduced to Zero, 1966-76⁽¹⁾
Thousands

Age group	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	18.5	37.4	19.3	18.3	37.6	20.0	19.0	39.0
5-9	18.3	17.8	36.1	18.0	17.6	35.6	18.6	17.7	36.3
10-14	17.8	17.3	35.1	17.8	17.2	35.0	17.7	17.4	35.0
15-19	18.7	18.4	37.1	17.3	16.8	34.0	17.5	16.9	34.4
20-24	14.5	13.5	28.1	17.7	17.3	35.0	16.6	16.3	32.9
25-29	13.6	12.9	26.5	13.8	12.9	26.7	17.2	17.1	34.3
30-34	13.7	14.6	28.4	12.4	12.0	24.4	15.2	12.4	27.6
35-39	13.3	13.8	27.1	12.6	13.5	26.1	11.8	11.5	23.3
40-44	13.7	14.6	28.3	12.6	13.2	25.8	12.2	13.2	25.3
45-49	12.2	13.5	25.7	13.0	13.9	26.9	13.2	12.8	26.0
50-54	13.2	14.7	27.8	11.6	13.0	24.6	12.5	13.5	26.0
55-59	13.8	15.6	29.4	12.6	14.1	26.7	11.2	12.7	23.8
60-64	12.0	14.2	26.1	12.3	14.6	26.9	11.3	13.5	24.8
65-69	8.4	11.9	20.3	10.7	13.2	24.0	11.1	13.7	24.8
70-74	6.0	9.8	15.8	6.2	10.1	16.3	8.0	11.3	19.3
75+	6.6	12.9	19.7	6.3	14.0	20.4	6.4	15.3	21.7
All ages	215.0	235.4	450.4	214.2	231.9	446.1	217.7	234.0	451.7
Index 1966 = 100			100.0			99.5			100.7

⁽¹⁾ See Table 7.10, note 1.

population, but also the decrease of women aged 20 to 25 and 35 to 45 will result in a smaller number of children born in the period after 1976. The fact that even with a considerable decline in migration loss from the region the age structure would still deteriorate lends cogency to the arguments for an effective policy to halt the present decline.

Projection 5

7.33. Projection 5 assumes that the 1961 birth and migration rates will continue from 1966 to 1971 (death rates declining as previously), but that migration will be 50% lower during 1971-76, and thereafter will be zero. This will produce a decline in the region's population up to 1976—by 8,000. Up to that year the net migration loss of 33,000 will not have been offset by the natural increase; but the position will then begin to improve, and by 1981 the cumulated natural increase for the whole period will be about 37,000 against the total (unchanged) net migration loss of 33,000 (there being no migration loss between 1976 and 1981). By 1981 the total population of the region will be 4-5,000 higher than in 1966.

7.34. Under this projection (see Table 7.14), the age structure in 1976 will be little different from that projected under Projection 6. The proportion of the population aged between 30 and 65 will have fallen from 43% in 1966 to 38% in 1976 and will remain so until 1981, when there will be an increase in the proportion of thirty-year olds. Also, the proportion of the population aged over 65 will increase to 15% in 1976, from 12% in 1966.

Projection 6

7.35. This projection (see Table 7.15) considers a less drastic reduction of migration up to 1976: it assumes that the present trend (that is, the 1961 rate) will continue to 1971, that net migration loss during 1971-76 will be two thirds of its previous level, and in 1976-81 one third. In 1981 net migration becomes zero. Thus it looks at the possible effect of economic action reducing migration loss towards, and after the end of, the period up to 1976. The general result will still be a reduction of population by 1976, this time by 3%. The net migration loss of 37,000 by 1976 will not be matched by the natural increase (which will only be 25,000). Between 1976 and 1981 however the gap will narrow and indeed be reversed since net migration in these five years will be 7,000 against a natural increase of 12,000. Thus population will rise slightly over this period; but in 1981 it will still fall short of its 1966 level, and indeed this will not be re-established until later in the 1980s.

7.36. The redistribution of population among age groups by 1976 will be little different from that predicted in Projections 4 and 5. The post-war bulge will be evident in the 20 to 30 year age groups, and there will again be an increase in the proportion of babies in the population compared with 1966. There will, however, be a noticeable decrease in the age group 15 to 20. The most striking change in the age structure will be the redistribution in the proportion of population aged 30 to 65. In 1966 they accounted for 43% of the population; in 1976 they will account for 38% of the population. This decline will continue up to and past 1981,

TABLE 7.14
Projection E: Migration Reduced to Zero, 1971-76
thousands

Age group	1966			1971			1976			1981			1981 resident population		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	18.5	37.4	19.3	18.8	37.5	19.5	18.5	38.0	20.5	19.4	39.9	20.5	19.4	39.9
5-9	18.5	17.7	36.1	17.7	17.4	35.0	18.5	17.5	36.1	19.1	18.2	37.3	19.1	18.2	37.3
10-14	17.8	17.3	35.1	17.8	16.9	34.5	17.5	17.0	34.5	18.4	17.5	35.9	18.4	17.5	35.9
15-19	18.7	18.4	37.1	17.0	16.5	33.5	17.8	16.5	34.3	17.5	16.9	34.4	16.8	16.9	33.7
20-24	14.5	13.5	28.1	17.3	17.1	34.4	16.8	15.9	32.7	17.1	16.5	33.6	16.2	16.5	32.7
25-29	13.6	12.9	26.5	13.4	12.7	26.1	16.6	16.5	33.1	16.2	15.9	32.1	15.6	15.9	31.4
30-34	13.7	14.6	28.4	11.9	11.5	23.8	12.5	11.9	24.4	16.5	16.5	33.0	16.1	16.5	32.6
35-39	13.3	13.8	27.1	12.0	13.0	25.0	11.1	10.8	21.9	12.5	11.9	24.3	12.3	11.9	24.1
40-44	13.7	14.6	28.3	13.3	13.6	26.9	11.5	12.5	24.0	11.0	10.8	21.7	10.9	10.8	21.6
45-49	12.2	13.5	25.7	13.7	12.9	26.3	11.8	12.5	24.2	11.4	12.4	23.8	11.3	12.4	23.7
50-54	13.2	14.7	27.6	11.5	12.9	24.4	12.2	13.2	25.4	11.5	12.9	24.7	11.4	12.2	23.6
55-59	13.6	15.6	29.4	12.5	14.0	26.4	11.0	13.5	24.5	11.0	11.8	22.8	11.8	11.8	23.7
60-64	13.0	14.2	26.1	12.3	14.4	26.7	11.2	13.1	24.3	10.2	12.4	22.6	10.2	12.4	22.6
65-69	8.4	11.9	20.3	10.7	13.1	23.8	7.9	11.2	19.1	8.5	11.6	20.1	8.3	11.6	19.9
70-74	6.0	9.3	15.3	6.1	10.0	16.2	6.3	15.2	21.5	7.7	16.9	24.6	7.7	16.9	24.6
75+	6.8	12.9	19.7	6.3	13.9	20.2	6.3	15.2	21.5	7.7	16.9	24.6	7.7	16.9	24.6
All ages	215.0	213.4	448.4	210.5	208.2	438.7	211.8	208.2	440.0	219.3	235.8	455.1	216.3	233.7	450.0
Index 1966 = 100	100.0			97.9			98.1			101.1			101.1		

(a) See Table 7.10, note 1.

TABLE 7.15
Projection 6: Migration Reduced to Zero, 1971-87(1)
thousands

Age Group	1966			1971			1976			1981			1981 resident population		
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	18.9	10.5	29.4	19.8	12.5	32.3	19.5	18.5	38.0	20.2	19.1	39.4	20.2	19.1	39.4
5-9	18.3	17.7	36.1	17.7	17.4	35.0	18.3	17.4	35.8	18.6	17.9	36.7	18.6	17.9	36.7
10-14	17.6	17.5	35.1	17.6	16.9	34.5	17.2	16.4	33.6	18.1	17.2	35.2	18.1	17.2	35.2
15-19	16.7	18.4	35.1	17.0	16.5	33.5	17.0	16.4	33.4	16.9	16.5	33.4	16.5	16.5	33.0
20-24	14.5	18.6	33.1	17.3	17.1	34.4	16.1	15.7	31.8	16.5	15.0	31.5	15.7	15.9	31.6
25-29	15.6	12.9	28.5	13.4	12.6	26.1	16.4	16.3	32.7	15.6	15.3	30.9	15.0	15.3	30.3
30-34	13.7	14.6	28.4	11.9	11.5	23.3	12.3	11.7	23.9	15.6	15.6	31.3	15.2	15.6	30.9
35-39	13.5	13.8	27.1	12.0	13.0	25.0	10.8	10.6	21.4	11.7	11.2	22.9	11.5	11.2	22.7
40-44	13.7	14.6	28.3	12.5	12.9	25.2	11.4	10.4	21.7	10.5	10.3	20.8	10.4	10.3	20.7
45-49	12.2	13.5	25.7	12.7	13.6	26.3	11.7	12.5	24.0	11.0	12.1	23.1	10.9	12.1	23.0
50-54	12.2	14.7	26.9	11.5	13.0	24.4	12.1	13.1	25.2	11.2	12.0	23.2	11.2	12.0	23.1
55-59	13.8	15.6	29.4	12.5	14.0	26.4	11.0	12.6	23.6	11.7	12.8	24.4	11.6	12.8	24.4
60-64	12.0	14.2	26.1	12.3	14.4	26.7	11.2	13.0	24.2	9.9	11.7	21.6	9.9	11.7	21.6
65-69	8.4	11.9	20.3	10.7	13.1	23.8	11.0	13.5	24.5	10.1	12.3	22.3	10.1	12.3	22.3
70-74	6.0	9.3	15.3	6.1	10.0	16.2	7.9	11.1	19.0	8.2	11.5	19.7	8.2	11.5	19.7
75+	6.8	12.9	19.7	6.3	13.9	20.2	6.4	13.1	21.4	7.6	16.7	24.3	7.6	16.7	24.3
All ages	215.0	233.4	448.4	210.5	228.2	438.7	210.0	226.4	436.4	213.6	228.2	441.8	210.7	228.1	438.8
Index 1966 = 100	100.0			97.9			97.8			98.6					

See Table 7.10, note 1.

TABLE 7.16

All Projections: Summary of Projected Structures in 1976 and of Changes 1966-76⁽¹⁾

Age groups	Actual 1966	Structures in 1976 - percentage of total population, Projection:							
		3	1	6	5	4	2		
0-4	8.4	8.9	9.0	8.7	(8.9)	8.6	(8.8)	8.6	8.6
5-9	8.0	8.5	8.2	8.2	(8.3)	8.2	(8.2)	8.0	7.8
10-14	7.8	7.9	7.8	7.8	(8.0)	7.6	(7.9)	7.7	7.7
15-19	8.3	7.7	7.7	7.7	(7.6)	7.6	(7.6)	7.6	7.6
20-24	8.3	7.1	7.3	7.3	(7.3)	7.3	(7.4)	7.3	7.4
25-29	5.9	7.2	7.5	7.5	(7.0)	7.5	(7.1)	7.6	7.8
30-34	6.3	5.1	5.4	5.5	(7.1)	5.6	(7.5)	5.7	5.9
35-39	6.1	4.4	4.4	4.9	(5.2)	5.0	(5.4)	5.2	5.5
40-44	6.3	3.2	5.4	5.4	(4.7)	5.5	(4.8)	5.6	5.9
45-49	5.7	5.4	5.5	5.4	(5.2)	5.5	(5.2)	5.4	5.6
50-54	6.2	5.8	5.8	5.8	(5.8)	5.8	(5.2)	5.8	5.8
55-59	6.6	5.5	5.4	5.4	(5.5)	5.3	(5.5)	5.2	5.2
60-64	5.8	5.8	5.6	5.5	(4.9)	5.5	(4.8)	5.4	5.3
65-69	4.5	5.9	5.6	5.6	(5.0)	5.6	(5.0)	5.5	5.3
70-74	3.4	4.5	4.3	4.4	(4.5)	4.3	(4.4)	4.6	4.1
75+	4.4	5.1	4.7	4.9	(5.5)	4.9	(5.4)	4.8	4.6
	100.0	100.0	100.0	100.0 (100.0)	100.0 (100.0)	100.0	100.0	100.0	100.1
Natural increase, '000s		+25.4	+20.8	+24.7 (+36.8)	+24.7 (+37.7)	+25.5	+25.5	27.2	
Net migration, '000s		-64.6	-45.8	-36.6 (-43.4)	-33.0 (-33.0)	-22.2	-22.2	n.l.	
Population, '000s		-41.2	-25.0	-11.9 (-6.6)	-8.3 (-4.7)	+3.4	+3.4	+27.2	
Change 1966-76, per cent		-9%	-5%	-8% (-1%)	-2% (-1%)	+1%	+1%	+6%	

(1) The projections are arranged from left to right in ascending order of projected total increases with the changes, 1966-76, in the lower part of the table. Figures in brackets, in Projections 5 and 6, show the structures in 1961 and, in the lower part of the table, the changes 1966-81.

although it will be matched by the movement of the post-war bulge into the early age ranges of this group of the population. Thus, by 1981, the proportion of population aged 30 to 65 will still be 38%.

7.37. Finally, in addition to the individual projections, given in Tables 7.10 to 7.15, two summary Tables are provided, 7.16 and 7.17, showing the projected structures and the absolute totals of births, deaths and net migration losses of all six projections.

Summary and Conclusions

7.38. In this and the following paragraph a brief summary of the main points emerging from this chapter is given.

- (i) The North-East population is declining due to a rate of net migration loss which more than offsets the comparatively high rate of natural increase.

(ii) Within the region the population of Aberdeen City continued to increase up to the early 1960s. The population of Moray is similarly higher now, both absolutely and relatively, than at the beginning of the century. All other counties have shown a decline over this period.

(iii) Compared with Scotland as a whole the region has a slightly lower proportion of its population in the age groups up to age 44 and a higher proportion in the groups above this age.

(iv) The high rate of net migration loss is the product of a combination of high out-migration and low in-migration.

(v) Within the region there is a strong rural-to-urban movement towards Aberdeen City, though the City's role as a reception point for migrants from

TABLE 7.17

All Projections: Summary of Total Births, Deaths and Net Migration Losses
thousands

Projection	1966 Population	1966-71 Births	1966-71 Deaths	1966-71 Migration Loss	1971 Population	1971-76 Births	1971-76 Deaths	1971-76 Migration Loss	1976 Population
1	448.4	37.6	27.2	22.2	436.5	37.9	27.5	21.6	435.4
2	448.4	37.6	25.0	—	460.9	41.1	26.4	—	479.6
3	448.4	37.6	25.0	33.3	427.6	36.4	25.5	31.3	407.2
4	448.4	37.6	25.0	14.8	446.1	39.0	26.0	7.4	451.7
5	448.4	37.6	25.0	22.2	438.7	38.0	25.8	10.8	445.0
6	448.4	37.6	25.0	22.2	438.7	38.0	25.8	14.4	439.4

the rural North of Scotland has declined somewhat.

- (vi) Aberdeen City is the main point of attraction in the region for long-distance in-migrants. Among North Easterners City residents are the least likely to move to other parts of the region and most likely to join the long-distance urban-to-urban migration flow.
- (vii) The migration patterns of Moray and Nairn are distinct from those of the rest of the region. Moray receives a relatively high proportion of migrants from outside the region, while out-migrants from both counties tend to leave the region altogether.
- (viii) Among occupational groups the rate of out-migration appears to be highest among university-trained and professionally-qualified workers. Among manual workers, skilled engineering and electrical workers have a higher rate of out-migration than other groups.

7.39. The projections in this chapter consider the future population size and structure under a variety of assumed conditions and especially of differing migration rates, mainly for the period 1966-76. Altering the migration assumptions shows the following pattern in terms of the age groups 0-9, 10-29, 30-64, and 65 and above.

- (i) As the migration loss projected declines, so the relative size of the two age groups 10-29 and 30-64 increases (and the proportion of the population under age 10, and over 64 declines in size).
- (ii) Despite this, all the projections indicate a worsening in the relative size of the working population in the structure compared with 1966. Even the most optimistic decline in migration (Projection 2) results in only a 2% increase over the 1966 age structure, and that in the 10-29 age group. Every projection predicts a relative decline in the population aged 30-64 between 1966 and 1976, and an increase in the proportion of people over 64.
- (iii) The size of the migration loss does not seem to be very significant. Even a large migration loss has little effect on the structure in 1976, and conversely even reducing the loss for the period 1966-1976 to zero produces only a 2% improvement in one age group, and still fails to maintain the size of the population group aged 30-64. This shows the potential deterioration in the present position, and also that there is very little to choose between each set of figures projected: they all show a slight worsening of the position between 1966 and 1976.

Employment and Labour

ROBERT SHAW

Employment Structure

8.1. The employment structure of North-East Scotland differs very markedly from that of Scotland as a whole or Great Britain. This is brought out in Table 8.1 which compares the percentage distribution of total employment by 'industry order' for June 1966 in each of these areas. From this table can be seen the heavy reliance of the North East on Primary industries, on Construction and—to a lesser extent—on Services. In the Primary sector, which in the survey area means agriculture, forestry and fishing, the dependence is nearly six times that

of the country as a whole; and in common with Primary industries throughout Great Britain, those of the North East have been showing a sharp decline in employment. In Construction the North East is not very much above the Scottish percentage though at a level nearly one and a half times the British figure; and since 1961 this industry has been growing particularly fast within the region. Given the large size of the Service sector its somewhat higher overall percentage of employment in the North East is not particularly remarkable. Within it, the Distributive trades and Professional and scientific services bulk more highly in the North-Eastern

TABLE 8.1
*Percentage Distribution of Employees in Employment⁽¹⁾
by Industry Order in June, 1966*

Industry Order		N.E. Scotland	Scotland	Great Britain
I	Agriculture, forestry, fishing . . .	11.7	9.5	2.0
II	Mining and quarrying . . .	0.2	2.7	2.5
	PRIMARY INDUSTRIES . . .	11.9	6.2	4.5
III	Food, drink and tobacco . . .	8.5	4.6	3.5
IV	Chemicals and allied industries . . .	0.8	1.6	2.5
V	Metal manufacture . . .	0.1	2.4	2.7
VI	Engineering and electrical goods . . .	3.1	8.5	9.9
VII	Shipbuilding and marine engineering . . .	1.8	2.2	0.9
VIII	Vehicles . . .	0.6	2.0	5.7
IX	Metal goods not elsewhere specified . . .	0.5	1.3	2.5
X	Textiles . . .	2.8	4.6	5.2
XI	Leather, leather goods and fur . . .	—	0.2	0.3
XII	Clothing and footwear . . .	0.1	1.5	2.3
XIII	Bricks, pottery, glass, cement, etc. . .	1.2	1.1	1.5
XIV	Timber, furniture, etc. . .	1.9	1.1	1.2
XV	Paper, printing and publishing . . .	5.8	2.7	2.8
XVI	Other manufacturing industries . . .	0.3	0.8	1.5
	ALL MANUFACTURING INDUSTRIES . . .	25.3	34.6	38.3
XVII	CONSTRUCTION . . .	10.3	9.1	7.2
XVIII	Gas, electricity and water . . .	1.3	1.6	1.8
XIX	Transport and communication . . .	5.7	7.3	6.9
XX	Distributive trades . . .	15.5	19.4	12.8
XXI	Insurance, banking and finance . . .	1.8	2.1	13.5
XXII	Professional and scientific services . . .	14.6	12.0	
XXIII	Miscellaneous services . . .	10.1	8.5	
XXIV	Public administration and defence . . .	5.6	5.3	5.8
	TOTAL SERVICES EXCLUDING CONSTRUCTION . . .	52.4	50.2	50.5
	GRAND TOTAL . . .	99.9	100.1	100.3

⁽¹⁾ Calculated from figures supplied by the D.E.P. Statistics for North-East Scotland are not completely comparable with those for Scotland and Great Britain; they exclude Civil Servants (Order 24) and Post Office workers (Order 19) for whom insurance cards are not held.

economy than in those of the other two areas. Also during the period 1961-66 the sector as a whole grew more slowly in the North East than in Scotland or Britain.

8.2. The Manufacturing sector in the North East on the other hand is comparatively small, providing only 25% of total employment in 1966 compared with the Scottish figure of 35% and the British proportion of 38%. But it is noteworthy that within the region this sector grew faster between 1961 and 1966 than it did in Britain as a whole. The only industrial groups in which the North East has a notably heavier percentage representation than Great Britain are Food, drink and tobacco, Shipbuilding and marine engineering, Timber and furniture, and Paper, printing and publishing. On the other hand the North East is comparatively deficient in Engineering and electrical goods, in Metal manufacture, in Metal goods and in Vehicles.

8.3. Passing reference has already been made to the rates at which employment has changed in the major sectors in the North East, Scotland and Great Britain during the first half of the sixties. Table 8.2 sets this out more explicitly.

8.4. The table shows that total employment has grown more slowly in the North East than in Scotland as a whole or Great Britain. That there was overall growth in the North East and in Scotland in 1961-66 was due entirely to the creation of additional employment for women, for both Scotland and the North East had fewer men in jobs in 1966 than in 1961.

8.5. Looking at the four major sectors it is apparent that Primary industries are contracting everywhere, but more slowly in the North East than elsewhere. The Manufacturing sector, which declined in Scotland as a whole and rose only slightly for Britain, actually grew by 5% in the North East. Construction has shown substantial growth in all areas and particularly in our region. But the large Service sector grew very slowly in the North East compared with elsewhere; and indeed there was a drop in male employment during this period.

8.6. Table 8.3 presents a more detailed picture of the economy of the North East, giving the numbers of people employed in the

major industrial groups in 1966, the change in numbers employed between 1961 and 1966 and the percentage which this change represented for a variety of industries. It must be emphasised however that these figures, which have been supplied by the D.E.P., are subject to important qualifications. At the level of a region of the size of the North East it is inherently difficult to estimate accurately the numbers of people employed in various industries, and the figures are 'estimates' in the true sense. None of the figures should be regarded as in any way precise, and this applies with particular force to any totals of less than two and a half thousand. It follows from this that the growth rates must also be viewed with reserve. In spite of these very real statistical difficulties, we consider that, provided the qualifications are borne in mind, the figures should be presented, and guarded use made of them, if only to give some idea of the orders of magnitude involved.

8.7. In June 1966, there were 158,700 employed persons in North-East Scotland. Of these 63% were men which was the same as the British figure and only marginally above the Scottish figure of 62%. Actually male employment as a percentage of all employment in 1966 showed a decline over 1961, but in this the North East was in no way exceptional. In total there were some 1,400 more people in employment in the region in 1966 than in 1961. But this was the net result of a rise of about 2,200 in women employees and a fall in employed men of some 800. This decline in male employment is explained by the fact that the Primary and Service sectors were 'releasing' men more quickly than jobs were being created in the growing sectors of male employment, Construction and Manufacturing. For women, on the other hand, a significant increase in employment in the Service sector, together with a lesser expansion in Manufacturing and in Construction, substantially outweighed the decline in employment in Primary industries.

8.8. However, the figure of 1,400 more jobs in 1966 may give an over-optimistic picture of the underlying trend during these years. A fair proportion of this increase could have been due to the fact that, in the context of the trade cycle,

TABLE 8.2
Percentage Change of Employees in Employment between June 1961 and June 1966 for North-East Scotland, Scotland and Great Britain⁽¹⁾

	N.E. Scotland			Scotland			Great Britain		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
	%	%	%	%	%	%	%	%	%
Primary industries . . .	-19	-12	-19	-29	-21	-28	-23	-7	-21
Manufacturing . . .	+6	+2	+3	-2	+1	-1	+1	-1	+1
Construction . . .	+20	+17	+20	+14	+21	+14	+15	+26	+14
Services . . .	-2	+5	+2	+5	+9	+6	+5	+14	+9
	-1	+4	+1	-1	+7	+2	+2	+7	+4

⁽¹⁾ The figures for North-East Scotland are subject to the qualifications in Note 1, Table 8.1. All totals have been rounded to nearest unit.

Industry Order	Employees in employment 1956			Actual change 1951-56			Percentage change ^(a) 1951-56		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
I Agriculture, forestry, fishing	17.1	1.5	18.6	-4.1	-0.2	-4.3	% -19	%	% -19
II Mining and quarrying	0.8	—	0.8	-0.1	—	-0.1	-19	-12	-19
PRIMARY INDUSTRIES	17.4	1.5	18.8	-4.1	—	-4.3	—	—	—
III Food, drink and tobacco	7.1	6.4	13.5	+1.5	+0.8	+2.3	+27	+14	+20
IV Chemicals and allied industries	1.0	0.3	1.3	—	—	—	—	—	—
V Metal manufacture	0.1	—	0.1	-0.1	—	-0.1	—	—	—
VI Engineering and electrical goods	4.0	0.9	4.9	+0.1	+0.2	+0.3	—	—	—
VII Shipbuilding and engineering	2.7	0.1	2.8	-0.4	—	-0.4	—	—	—
VIII Vehicles	1.0	1.0	2.0	—	—	—	—	—	—
IX Metal goods not elsewhere specified	0.4	0.2	0.6	+0.1	-0.5	-0.4	—	—	—
X Textiles	1.7	2.7	4.4	—	—	—	—	—	—
XI Leather, leather goods and fur	—	—	—	—	—	—	—	—	—
XII Clothing and footwear	1.6	0.1	1.7	—	-0.1	-0.1	—	—	—
XIII Bricks, pottery, glass, cement, etc.	2.4	0.5	2.9	—	—	—	—	—	—
XIV Timber, furniture, etc.	4.1	1.9	6.0	+0.2	-0.1	+0.1	—	—	+21
XV Paper, printing and publishing	0.3	0.2	0.5	+0.1	+0.2	+0.3	+6	+14	+5
XVI Other manufacturing industries	26.6	13.5	40.3	+1.6	—	+1.6	+20	—	+20
ALL MANUFACTURING INDUSTRIES	13.5	0.7	16.3	+2.6	+0.1	+2.0	—	—	—
XVII CONSTRUCTION	—	—	—	—	—	—	—	—	—
XVIII Gas, electricity and water	1.8	0.2	2.0	+0.2	—	+0.2	—	—	—
XIX Transport and communication	7.7	1.4	9.1	-1.5	-0.2	-1.7	-4	-2	-3
XX Distributive trades	11.7	12.7	24.3	-0.5	-0.1	-0.6	—	—	—
XXI Insurance, banking and finance	1.7	1.2	2.9	+1.2	+2.6	+3.8	+22	+19	+20
XXII Professional and scientific services	7.0	16.2	23.2	+0.6	+0.4	+1.0	+10	+4	+7
XXIII Miscellaneous services	6.7	9.4	16.1	-0.8	-0.4	-1.2	-16	-5	-18
XXIV Public administration and defence	4.2	1.5	5.7	-0.9	-2.0	-2.9	-2	+5	+14
TOTAL SERVICES EXCLUDING CONSTRUCTION	40.7	42.6	83.3	—	—	—	—	—	—
Grand Total	108.5	58.4	159.7	-0.6	+2.2	+1.4	-1	+4	+1

(a) Absolute totals and actual changes are not shown where they are less than 50. Percentage changes are not shown for cells of less than 5,000 employees.
Source: D.R.P.

1966 was an inherently more prosperous year than 1961. The evidence for some cyclical influence on these figures is discussed in Appendix C1.

8.9. Economic activity within the region is heavily concentrated within the Aberdeen employment exchange area.⁽¹⁾ In fact the area contains well over half the region's employment in all major sectors except that of Primary production.

TABLE 8.4

Employees (including Unemployed) of the Aberdeen Exchange Area as a Percentage of Total Employees in the North East, by Sectors, June 1966

Sector	M.	F.	T.
	%	%	%
Primary production . . .	29.9	36.1	30.4
Manufacturing . . .	63.9	66.3	64.7
Construction . . .	61.3	66.5	61.5
Service industries . . .	66.6	64.6	65.6
All industries . . .	59.6	64.3	60.7

Source: D.E.P.

8.10. The importance of the Aberdeen exchange area within the North East is increasing steadily. In 1961 it accounted for 59% of employees, in 1965 60%, and as the above table shows 61% in 1966. The only other important areas are Elgin and Lossiemouth together, with 8%, and Peterhead and Fraserburgh each with 5%. The nine other exchange areas of the region accounted for only 19% of employees in 1966. As a centre of employment for women the Aberdeen exchange area, with its variety of Service occupations, has an even greater importance: in 1966 64% of female employment was located there.

The Supply and Demand for Labour up to 1976

8.11. The preceding paragraphs have given a brief picture of the structure of employment in

⁽¹⁾ It should be noted that the Aberdeen employment exchange area is a very extensive one, taking in a considerable tract of the countryside around the City.

the area and how this compares with that of Scotland as a whole and with Great Britain. We shall now attempt an estimate of the supply and demand position for labour in the region, in 1971 and in 1976, to establish a job target which would be consistent with what we shall take as a provisional objective: the reduction in net migration from the area to zero between 1971 and 1976. The projected demand for labour is considered first and it should be noted that 'demand for labour' is interpreted in a broad sense to include estimates of changes in the numbers of self-employed persons, as well as in employees. Changes in self-employment, due for example to structural changes in agriculture or in the Service trades, will alter the number of 'openings' for people in the North East, and so will affect the economically active population that the region can support.

8.12. Two methods of estimating the demand for labour in 1971 and 1976 are used. First we aggregate the estimates prepared by the authors of the chapters—the following chapters—on the various sectors of the regional economy. Secondly, we shall make a simple extrapolation into the future of the overall growth rates of the first half of the 1960s, to get some comparison of the sectoral estimates with the experience of the recent past. In both cases projected changes in self-employment are combined with those in employment. This has necessitated the adjustment of some of the sectoral estimates, where these were confined to employment only, and these adjustments have been based on Census figures. The total number of jobs in 1966, from which both projections are made, is taken from the 10% sample Census of that year since, in contrast with the D.E.P. estimates so far used, the Census data cover the self-employed as well as 'employees in employment.'

8.13. According to the Census, employment in the area at April 1966 was 124,500 males and 63,100 females, making a total of 187,600. The calculated changes in the various sectors, which relate in the first place to 1970 and 1975, take these totals as their bases. In two cases the estimates made here include a range of possibilities, and the calculations here have been made for both the upper and lower limits. The various estimated changes are set out in Table 8.5.

TABLE 8.5

Estimated Net Changes in Employment, and Self-Employment, by Sector, in N.E. Scotland 1966-70, and 1970-75

thousands

	Changes between 1966 and 1970				Changes between 1970 and 1975			
	Lower limit		Upper limit		Lower limit		Upper limit	
	Males	Females	Males	Females	Males	Females	Males	Females
Primary industries . . .	-3.7	-0.2	-3.7	-0.2	-4.5	-0.2	-4.0	-0.2
Manufacturing . . .	+0.9	+0.3	+0.9	+0.3	+0.3	+0.7	+0.3	+0.7
Construction . . .	-0.5	—	-0.3	—	—	—	—	—
Services . . .	-0.3	+0.4	-0.3	+1.1	-0.5	+0.6	+0.7	+1.4
Total . . .	-4.2	+0.3	-3.6	+1.2	-4.2	+1.1	-2.5	+1.9

Combining these estimated changes with the 1966 employment totals gives us an upper and lower estimate of the demand for labour in 1970 and 1975. However, because of the incidence of the population Census in 1966, and again in 1971, the population projections that are made in Chapter 7 relate to 1971 and 1976. It is convenient therefore to take these as our projection years for labour supply and demand. Accordingly the total estimates of change in the demand for labour in Table 8.5 have been adjusted to 1971 and 1976, by a proportional increase in the case of the 1970 figure, and by simple extrapolation in the case of 1975. The adjusted demand figures are given in Table 8.6 along with the basic projections for 1970 and 1975.

TABLE 8.6
Estimated Demand for Labour in North-East Scotland, 1970-76
thousands

	Lower estimate			Upper estimate		
	Males	Females	Total	Males	Females	Total
1970	120.3	63.9	184.9	120.9	64.3	185.2
1975	117.2	64.7	181.9	119.5	66.2	185.7
1971	119.7	63.8	183.5	120.6	64.5	185.1
1976	116.6	64.9	181.5	119.2	66.4	185.6

8.14. The alternative method of arriving at an estimate of the demand for labour is by extrapolating the trends in aggregate figures in the recent past. For this purpose we use a combination of the Census and D.E.P. statistics. The Census, in addition to providing the only source of information about the self-employed, provides a more complete coverage of certain classes of employee, especially in public administration and defence and in the category of Miscellaneous services. Because of this the Census figure for total employees is higher than that of the D.E.P. except in the case of the 1961 total for female employees. It appears that the Census coverage of women workers in that year was defective and that the 1966 figures represent a considerable advance in accuracy over those of earlier years. The relevant data from the two sources are set out in Table 8.7.

TABLE 8.7
Employees in Employment and the Self-Employed in North-East Scotland 1961 and 1966
thousands

	Employees in employment ⁽¹⁾						Self-employed		
	Census data			D.E.P. data			Census		
	M	F	Total	M	F	Total	M	F	Total
1961	109.2	51.0	159.2	101.1	56.2	157.3	21.4	2.7 (3.1) ⁽²⁾	24.1
1966	108.1	60.6	168.7	109.3	59.6	158.7	16.4	2.5	18.9
1966 adjusted	107.2	61.3	168.5	99.6	58.0	157.6	16.3	2.5	18.8

⁽¹⁾ Census figures relate to April, D.E.P. figures to June.

⁽²⁾ This is an estimated revision to provide a figure comparable with 1965.

8.15. In addition to the actual totals for 1961 and 1966 a set of 'adjusted' figures is given for 1966. These have been obtained by re-calculating the 1966 figures at the rate of unemployment which existed in 1961, for, with the exception of the 1966 Census rate for females, all the rates had fallen between 1961 and 1966, reflecting the fact that the North East like Scotland was probably at a higher point in the trade cycle in the latter year. Rates of growth have been calculated using the 1961 totals and the adjusted figures for 1966. No rate has been calculated for the change in the Census totals of female employees between the two dates since the figures are, statistically, almost certainly not comparable. The same problem obviously arises with the female self-employed, but as this is the only available figure for this category of the work-force an attempt has been made to adjust the 1961 figure to allow a calculation to be made.⁽¹⁾ The resulting rates of change are given in Table 8.8.

TABLE 8.8
Percentage Changes of Employment and Self-Employment in N.E. Scotland, 1961-66⁽¹⁾

Source	Employees in employment		Self-employed	
	M	F	M	F
D.E.P.	-1.5	+3.2	n.a.	n.a.
Census	-0.0	n.c.	-23.8	-19.4

⁽¹⁾ n.a. signifies 'not calculated', n.c. 'not available'.

8.16. We can now apply these past rates of change to the actual 1966 Census totals to make a very crude projection of the demand for labour in 1971 and 1976. In doing this we assume that future conditions will be similar to those of the recent past and, specifically, that the 1966 rate of unemployment continues to obtain. The results are presented in Table 8.9. In the case of male employees two estimates are given, the first (a) based on the D.E.P. rate of change and the second (b) on the Census rate. In the case of

⁽²⁾ For the basis of the adjustment see Appendix C.

TABLE 8.9
Estimated Demand for Labour in N.E. Scotland in 1966, 1971 and 1976
(thousands)

	1966			1971			1976		
	M	F	T	M	F	T	M	F	T
	(a)	(b)		(a)	(b)		(a)	(b)	
Employees in employment	108.1	60.6	168.7	106.5	107.1	213.6	104.9	106.1	211.0
Self-employed	16.4	2.5	18.9	12.5	2.0	14.5	9.5	1.6	11.1
Total	124.5	63.1	187.6	119.0	109.6	228.6	114.4	107.6	222.0

the self-employed only Census figures can be used.

8.17. Comparing the estimates of the demand for labour in Table 8.6 with those given in 8.9 it can be seen that for 1971 the two are in substantial agreement; for 1976 however they diverge, though even here the estimates of the demand for female labour are quite close. The major difference is in the 'upper' estimates for men: that derived from a crude extrapolation of past trends (Table 8.9) is, by 1976, appreciably below the aggregated sectoral projection of Table 8.6. The important question, however, is the *balance* between the supply and demand for labour, and we must now look at the supply side of the matter.

The Supply of Labour

8.18. The Sample Census of 1966 put the supply of labour, apparently available for work in that year in the North East, at 129,600 males and 66,000 females. These are the totals of 'economically active' persons, a class which the Census defines to include the employed, the self-employed and the unemployed: that is, those who are at work or have registered themselves as willing to work. By expressing these figures as percentages of the male and female populations respectively aged 15 and over in the North East it is possible to calculate a type of *activity rate* which can be compared with the

corresponding rates for Great Britain. These rates are set out in Table 8.10.

TABLE 8.10
Economically Active Persons as a Percentage of the Resident Population aged 15 and over, April, 1966

	Males	Females
Great Britain	84.0	42.2
North-East Scotland (actual)	82.6	36.8
North-East Scotland (potential)	83.4	42.5

Source: 1966 Sample Census

8.19. It is apparent from Table 8.10 that the actual activity rates in the North East are lower than the comparable British rates, in the case of women markedly so. A possible explanation of this difference in the overall rates is that the North East has an unfavourable age structure with a heavy representation of old people who have low rates of activity. This hypothesis was tested in the following way. Activity rates were calculated for each five-year age group from 15 to 69 and for the group 70 plus, for males and females, for the population of Great Britain as a whole.⁽¹⁾ These age-specific rates were then applied to the numbers of people in the respective age-groups of the North-East population as

⁽¹⁾ These rates are set out in Appendix C.

TABLE 8.11
The Economically Active, the Economically Inactive and the Resident Population Aged 15 and over in 1966—Great Britain and North-East Scotland⁽¹⁾
(thousands)

	Great Britain		North-East Scotland	
	Males	Females	Males	Females
Resident population 15 and over	19,029.7 (100%)	21,011.1 (100%)	157.0 (100%)	179.4 (100%)
Economically active	15,993.9 (84.0%)	8,862.7 (42.2%)	129.6 (82.6%)	66.0 (36.8%)
Economically inactive	3,035.8 (16.0%)	12,148.4 (57.8%)	27.5 (17.4%)	113.4 (63.2%)
Retired	1,911.4 (10.0%)	499.7 (2.4%)	16.6 (10.6%)	4.3 (2.4%)
Students	674.5 (3.5%)	596.7 (2.8%)	6.1 (3.9%)	6.1 (3.4%)
Others	450.0 (2.4%)	11,052.1 (52.6%)	4.7 (3.0%)	103.0 (57.5%)

⁽¹⁾ The totals are of people defined as 'usually resident' in the areas concerned.
Source: 1966 Sample Census.

it was in 1966. From this operation were derived totals for males and females showing the numbers who would have been active had these detailed British rates applied in the various age-groups of the North East. These totals were then expressed as percentages of the relevant totals of men and women in the North-East population, and they are shown as the third line of figures in Table 8.10—the 'potential' activity rates of the region. These 'potential' activity rates provide a measure of the influence of the age structure of the regional population on the 'actual' activity rates. The comparison between the two sets of rates shows that the low activity of men in the North East is only to a small extent to be explained by the age structure of the population: of the difference between the actual rates, nearly two-thirds is 'genuine' in the sense of reflecting inactivity on the part of men who, on the grounds of age, could have been expected to be 'economically active'. In the case of women the age structure of the regional population would have justified a much higher overall rate. In absolute terms it would have required another 1,300 men and 10,300 women to enter the labour market to bring the North-East figures to equality with the British rates.

TABLE 8.12

Percentage Breakdown of the Economically Inactive in 1966—Great Britain and North-East Scotland

	Males		Females	
	G.B.	N.E.S.	G.B.	N.E.S.
Retired . . .	62.9	60.6	4.1	5.8
Students . . .	22.2	22.2	4.9	5.3
Others . . .	14.8	17.2	91.0	89.9
	99.9	100.0	100.0	100.0

Source: 1966 Sample Census.

8.20. A second possible explanation of the low activity rates for North-East Scotland would be that the region contains a naturally high proportion of those whom the Census defines as 'economically inactive', that is retired people, students and so forth. Tables 8.11 and 8.12 provide figures for a comparison of the economically inactive for Great Britain and North-East Scotland. It appears that the North East has somewhat higher proportions of all three categories of 'inactive' men than the country as a whole. However the higher percentage of 'others' is unexplained; this may point to a pool of unused male labour (in absolute terms, rather more than a thousand men). In the case of women, the 'retired' category is the same percentage as for Great Britain, students are higher, and 'others' very much higher.

8.21. For women the very high proportion of 'others' in the North East probably includes some who should be regarded as 'at work' for at least part of the time, though not declaring themselves as such—for example, farmers' wives. But also important is the fact that in the

case of women's work, supply is to some extent created by demand: if more work were available, more workers would be forthcoming. Finally, the rural character of much of the area, and the travelling distances involved, may reduce the opportunity and desire to work on the part of many women.

8.22. For men, possible explanations are less obvious. One possibility, which would also apply to women, is that fewer people in the North East need to work because of a higher level of investment income. Recently published figures⁽⁴³⁾ show that in North-East Scotland net investment income accounts for 9.7% of the total net income (as defined by the Inland Revenue Department), compared with a corresponding Scottish figure of 7.9% and a U.K. figure of 7.3%. But, of course, this higher percentage of investment income may simply reflect the lower level of wages, which in any case form the main part of net income. Furthermore, a large number of those living on investment incomes will be retired persons, and therefore excluded from the economically active on this account.

8.23. Whatever may be the full explanation⁽⁴⁴⁾ of the activity rates of the North East, they are lower than the corresponding national rates. We have therefore made estimates of the 'potential' labour supply in the North East in 1966, 1971 and 1976, on the assumption that the British age-specific activity rates, already referred to, obtained in the region. These rates have been applied to the 'enumerated' population of the North East in 1966, while for future years, up to 1976, we have used Projection 5, from Chapter 7, adjusted from a 'total' to an enumerated basis.⁽⁴⁵⁾ Before commenting on the implications of this projection, there is one other assumption that has been made in calculating the future labour supply: the future rate of unemployment. It has been assumed that at all future dates there will be a rate of unemployment equal to the national average rates in 1966, that is 2.2% for men and 1.3% for women.⁽⁴⁶⁾ The resulting totals are described as the 'potential employed labour force', and they are presented in Table 8.13.

⁽⁴³⁾ Board of Inland Revenue Report, 1967, Cmd. 3200.

⁽⁴⁴⁾ One reason suggested for the lower activity rates of the North East is that migration has depleted the ranks of the working age groups. But this can explain no more than the comparatively small difference between the Great Britain rate (84.0%) and the North East 'potential' rate (83.4%) since the latter takes account of all peculiarities in the age structure of the North-East population.

⁽⁴⁵⁾ The figures of Projection 5 have been adjusted in this way to bring them as nearly as possible to a 'usually resident' basis. This is because in projecting demand we used Census employment totals which refer to the 'resident population'. The 'enumerated' and 'resident' populations are defined with slight differences, but the actual differences in total numbers, in the relevant age groups, is very small.

⁽⁴⁶⁾ These unemployment rates are derived from the 1966 Census. They measure the unemployed as a percentage of the economically active population and refer to the Census date in April. They are somewhat higher than the D.E.P. rates calculated at June.

TABLE 8.13
*Potential Employed Labour Force in
N.E. Scotland, 1966-76*

<i>thousands</i>			
Year	Males	Females	Total
1966	128.1	75.5	203.6
1971	123.7	72.4	196.1
1976	122.5	70.0	192.5

8.24. Projection 5, from Chapter 7, which is used as the basis for the projections in Table 8.13, assumes a continuance of present population trends, including the current level of migration, up to 1971. Thereafter it assumes that net outward migration is reduced to zero by 1976. As a basis for projecting the future labour supply, the assumption of migration continuing at its present level up to 1971 is a reasonable one for present purposes in that any new action to which this Report may lead is unlikely to have much impact before that year. But what is the most acceptable objective to aim at after that year? In Chapter 1 it was stated that the immediate short-term target for policy should be the stabilising of the region's population, by reducing net migration to equality with natural increase, and that this should be aimed at for the mid-1970s. As a target, this falls short of the assumptions of Projection 5 and indeed it is unlikely that a rate of expansion which would eliminate net migration by 1976 can be achieved. Nevertheless, in estimating the balance of supply and demand for labour in the mid-seventies, we shall assume this relatively ambitious objective, implicit in Projection 5; we can then indicate the downward adjustments that might be made in this target later. A comparison between the potential labour supply, projected on this basis, and the estimates of demand for labour derived from the sectoral projections of later chapters (and summarised in Table 8.6) is made in Table 8.14. In Table 8.15 precisely the same exercise

is undertaken using the extrapolations based on Census and D.E.P. sources, as described in paragraphs 8.16 and 8.17 above.

8.25. Both Tables 8.14 and 8.15 (rows 4 and 5) show an *apparent* improvement in the overall balance of supply and demand for labour up to 1976. But much the larger part of this improvement is in the female balance and is due to the projected increase in demand in the face of declining supply. Three out of the four projections predict a worsening of the male balance. It must be reiterated however that the supply figures used in these tables assume *continuing* migration, at present rates up to 1971, and at falling rates thereafter. Thus the balance in all cases appears to improve because of the continuing removal of part of the supply.

8.26. Assuming we were to embrace the objective of eliminating net migration by 1976, which of these projections of the cumulative 'shortage' of jobs should we accept as the guide for regional policy? Having regard to the manifold uncertainties surrounding this exercise, probably the most sensible course is to take an estimate in the region of 10,000, made up of 7,000 men's jobs and 3,000 women's, as the number of new jobs which would need to be created by 1976 in addition to those which we foresee as likely to be produced by current trends in the existing industries of the region. If accepted as an objective this could be regarded as a minimum condition for bringing net outward migration to a halt by 1976.

8.27. It may well be said that as a 'target' for policy this is over-optimistic, and on more than one ground. It is certainly optimistic to expect to establish activity rates equal to those for Britain as a whole, especially as some migration will still be going on after 1971 reflecting an insufficient demand for labour. An entirely different factor tending to raise our estimates of the potential supply of labour in the North East is the fact that we take no account of a probable decline in national activity rates between 1966 and 1976. On the other hand we

TABLE 8.14
*Estimates of the Balance of Supply and Demand for Labour in North-East Scotland
at 1966, 1971 and 1976 with Demand based on Sectoral Estimates of Demand*

	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1. Estimated supply ⁽¹⁾	128.1	75.5	203.6	123.7	72.4	196.1	122.5	70.0	192.5
2. Estimated demand (Upper limit)	124.5	63.1	187.6	120.6	64.5	185.1	119.2	66.4	185.6
3. Estimated demand (Lower limit)	124.5	63.1	187.6	119.7	63.8	183.5	116.6	64.9	181.5
4. Estimated shortage of jobs (Row 1 minus row 2)	3.6	12.4	16.0	3.1	7.9	11.0	3.3	3.6	6.9
5. Estimated shortage of jobs (Row 1 minus row 3)	3.6	12.4	16.0	4.0	8.6	12.6	5.9	5.1	11.0

⁽¹⁾ Supply projection taken from Table 8.13.

TABLE 8.15

Estimates of the Balance of Supply and Demand for Labour in North-East Scotland at 1966, 1971 and 1976 with Demand based on Extrapolations of Census and D.E.P. data

thousands

	1966			1971			1976		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1. Estimated supply ⁽¹⁾	128.1	75.5	203.6	123.7	72.4	196.1	122.5	70.0	192.5
2. Estimated demand (Estimate (b) of Table 8.9)	124.5	65.1	189.6	119.6	64.5	184.1	115.6	66.1	181.7
3. Estimated demand (Estimate (a) of Table 8.9)	124.5	63.1	187.6	119.0	64.5	183.5	114.4	66.1	180.5
4. Estimated shortage of jobs (Row 1 minus row 2)	3.6	12.4	16.0	4.1	7.9	12.0	6.9	3.9	10.8
5. Estimated shortage of jobs (Row 1 minus row 3)	3.6	12.4	16.0	4.7	7.9	12.6	8.1	3.9	12.0

⁽¹⁾ Supply projection taken from Table 8.13.

also take no account—it would be very difficult to do so in any quantified way—of a potential increase in the supply of labour due to movement out of low productivity occupations if and as demand for labour expands. This is a possibility which impacts a very wide degree of uncertainty to any projections of labour supply for a region like the North East; it could easily outweigh any overestimate of activity rates. Finally, however, it must be conceded that the target implicit in the population projection which we use—the complete elimination of net outward migration by 1976—is almost certainly too ambitious. Earlier, in Chapter 1, we proposed the stabilisation of the regional population (involving an equality between natural increase and net emigration) as a more feasible objective for the mid-seventies. With this in view a more reasonable figure to aim at would be 8,000 extra jobs, say 5,000 for men and 3,000 for women, by 1976. There are, of course, dangers in aiming too low, since a failure to achieve the target chosen would postpone the stabilisation of the North-East population beyond 1976. Eight thousand jobs, over and above existing trends, should therefore be regarded as the minimum objective. But one may reiterate a point made in Chapter 1: not all these jobs will have to be imported.⁽¹⁾ A target of 8,000 extra jobs would probably be attained if between 6 and 7,000 could be imported into the region from outside. The remainder would be generated locally by the population retained as a result of the attraction of new industry. Indeed, if this degree of general expansion was successfully stimulated in the region, there would almost certainly be some expansion in Construction which would add to the internally generated employment and further reduce the need for the importation of jobs from outside.

Other Aspects of the Labour Market in North-East Scotland

8.28. In the final section of this chapter we turn to some qualitative aspects of the labour market in the survey area, and we begin with a short comment on the socio-economic composition of the labour force. Table 8.16 gives a breakdown into socio-economic groups of the male labour force of North-East Scotland at April 1966 with comparative figures for Scotland and Great Britain for 1961. The main feature which emerges is the strong representation within the area, compared with Scotland and Great Britain, of employers, managers and professional workers (column 2), and of semi-skilled manual workers, personal service workers and agricultural workers (column 5). The former is attributable to the number of farmers in the region who are classed as employers, as well as to the many professional workers in research institutes, centres of higher learning, and medical institutions. The ratio of semi-skilled workers is high because of the character and size of the Service and Primary sectors of the region. On the other hand the comparatively low percentage of skilled manual workers, foremen and workers on own account (column 3) is a consequence of the smallness of the Manufacturing sector which, along with Construction, is the main employer of skilled men.

8.29. There are certain well-established features of the entry of young people into the labour market in North-East Scotland which the figures for 1966 illustrate. In that year just over 5,500 pupils left school. Of these 70% left at age 15 from a non-certificate course; another 14% had three or more 'H' levels; and the remaining 16% had qualifications intermediate to these. The comparable figures for Scotland as a whole were 76% leaving at 15, another 12% having three or more 'H' levels and the rest having intermediate qualifications. Table 8.17 gives comparative information about the broad

⁽¹⁾ See para. 1.29, above. The qualifications in footnote, p.10, should be noted.

TABLE 8.16

Percentage Distribution of Male Labour Force aged 15 and over into various Socio-Economic Groups in North-East Scotland, Scotland and Great Britain⁽¹⁾

1	2	3	4	5	6	7
Area	Employers, managers and professional workers ⁽²⁾	Skilled manual workers (including foremen and workers on own account) ⁽³⁾	Non-manual workers	Semi-skilled manual workers (including personal service and agricultural workers)	Unskilled manual workers	Armed forces and others ⁽⁴⁾
N.E. Scotland	%	%	%	%	%	%
Scotland	16.2	34.6	13.3	23.0	8.4	4.3
Great Britain	12.7	39.7	15.4	19.6	9.9	2.7
	14.6	39.6	16.7	17.6	8.0	3.4

⁽¹⁾ Percentages for North-East Scotland are calculated from Sample Census, 1966, data; those for Scotland and Great Britain from Census, 1961, data.

⁽²⁾ Includes 'Farmers—employers and managers'.

⁽³⁾ Includes 'Farmers—own account'.

⁽⁴⁾ 'Others' are persons with inadequately described occupations.

TABLE 8.17

Percentage Distribution of Young Persons Entering Employment in 1966 in N.E. Scotland, Scotland and Great Britain⁽¹⁾

	Apprenticeship to skilled occupation or employment leading to recognised professional qualification		Entering clerical employment		Entering other employment	
	Boys	Girls	Boys	Girls	Boys	Girls
North-East Scotland	%	%	%	%	%	%
Scotland	42.9	10.7	6.1	29.2	51.0	60.1
Great Britain	46.4	7.1	7.6	53.6	49.0	57.3
	43.6	8.4	9.1	40.1	47.2	51.5

⁽¹⁾ 'Young persons' are defined as those aged 15–17 years.

Source: D.E.P.

types of employment which these young people entered in 1966.

8.30. The figures show that fewer boys, but more girls, enter upon apprenticeships or equivalent training in the North East than in Scotland or Great Britain, though for boys the divergence from the British figure is not very great. The greatest divergence from the national proportion occurs in clerical employment where the figures for girls in particular is much below British and Scottish figures. More boys and girls enter the category of 'other employment' in the North East than elsewhere, and it is here that training facilities and job prospects are less good. In common with the British pattern most apprenticeships for boys occur in Construction and in engineering industries. Training facilities are extremely good in the area. This has long been so on the educational side and the training centres now being opened by some of the Industry Training Boards are improving still further the work side of training. Table 8.18 shows the percentage distribution by sector of first employment for boys and girls in 1962 and

1966 for the North East, with comparative figures for 1966 for Great Britain. This reflects fairly accurately the economic structure of the North East, with a large entry to Services and Primary industry (though this is declining significantly) and a low entry to Manufacturing industry compared with Great Britain.

TABLE 8.18

Percentage Distribution by Sector of first Employment for Boys and Girls, 1962 and 1966

	North East		Great Britain
	1962	1966	1966
Primary industry	%	%	%
Manufacturing	11.0	7.0	4.1
Construction	23.2	25.5	36.1
Services	6.1	7.1	7.2
	59.6	59.1	52.6
	100.1	99.6	100.0

8.31. There are certain well established patterns of movement of labour. First there is the daily movement of people from the countryside to work in the towns and villages of the area. Secondly, major centres such as Aberdeen, Elgin and Peterhead provide employment for workers living in nearby towns and country districts. A variety of studies have established information about travel-to-work.⁽¹⁾ From these, it is clear that the Aberdeen travel-to-work area extends to Stenachven in the south, to Banchory in the west, Inverurie in the north-west and Ellon in the north. Indeed there is movement from as far afield as Peterhead, Fraserburgh, Turriff and Huntly, but this is exceptional. (It must also be said that as yet travel-to-work to Aberdeen from places like Banchory and Inverurie is not on a large scale.) The Elgin travel-to-work area extends to Lossiemouth in the north, Buckie in the east and Forres in the west. There is some movement from further afield, e.g. from Keith, and this might be encouraged by further development at Elgin. Nairn on the western boundary of the survey area looks predominantly to Inverness as an outlet for employment. Huntly is relatively self-contained, although a number of people travel daily from Huntly to Keith, Inverurie and Turriff. Though Fraserburgh and Peterhead are near enough to permit movement between them, in fact not many live in the one place and work in the other.

8.32. It must be stressed that on average the travel-to-work distances in the North East are short. Over 70% of the firms which answered the Manufacturing questionnaire indicated that more than nine-tenths of their employees travelled under five miles to work. On the other hand, some people do seem prepared to travel up to 15 miles to their work; and this distance might be regarded as about the upper limit at the present juncture. One possible reason for the relatively short travel-to-work distances in the North East is the low level of wages. Travel-to-work costs as a proportion of wages might be closer to the national average than travel-to-work distances are to the corresponding national average.⁽²⁾

8.33. Two other types of movement within the area call for comment. First, there is a migratory movement into Aberdeen of skilled workers and of girls seeking secretarial posts; it is only the City which offers a suitable supply of such jobs. Secondly, there is the movement of young people seeking further education or training; again many of the relevant facilities are available only in Aberdeen or in centres outside the region. The majority of these people are usually lost permanently to their place of origin, since

local openings are usually limited to teaching and the other professions. It has even been represented to us that the provision of commercial training in Aberdeen City reduces the supply of young people for other comparable types of employment in the more outlying places; but we do not ourselves consider this to be a disadvantage to the region as a whole.

8.34. As well as these intra-regional movements there is a large exodus of labour from the region. As we have emphasized, it is this outward movement which prevents the rate of unemployment from reaching higher figures than it does. On average the area appears to lose some 1,300-1,400 male workers and over 600 female workers annually. If we assume that an average year's outflow of workers had remained within the area in 1966, and was unemployed, it would have raised the male unemployment figure for June 1966 from 2.5% to 3.8% and the female figure from 1.4% to 2.4%.

8.35. Not a great deal is known in detail about the emigrants, though information derived from the Census returns has been discussed in Chapter 7. It appears that those who seek work elsewhere with the help of the D.E.P. represent a fair cross-section of the working population, and the reason for leaving the area is usually to get work, especially with better career prospects rather than, for example, to get better housing. Reference has been made to the loss of educated manpower both here and in Chapter 7. Some more detailed information is available from the Aberdeen University Careers and Appointments Service for the year to 30th September, 1967. During that year 781 students used the service, and of these about 60% went on to teacher training, further study or research: their final destination is therefore unknown, though eventually a high proportion (about a half would seem a reasonable estimate) may be employed locally. Twenty-four per cent of all the students covered by this return entered employment in this country, while the remainder were still seeking work, were not available for work, or had obtained work overseas. Most information is available about those who entered employment in this country. They were 197 in number, with 117 of them from the Aberdeen area. Of these 117, only 61% were able to obtain employment in Scotland, let alone in the survey area. In another survey by the Careers and Appointments Service, of 257 students who graduated in 1956 in Arts, Science and Applied Science, 111 answered a questionnaire on the location of their employment. From these replies it emerged that 54% were employed in Scotland in 1966.

8.36. What is the supply of unused labour in the North East? In July 1968 there were, unemployed, some 3,280 men and boys and 850 women and girls. An analysis of these persons by age and duration of unemployment, by the D.E.P. enables a comparison to be made with Scottish and British figures. Table 8.19 shows that in the North East unemployed males tend to be older than the British average, while the unemployed women are younger. It is well

⁽¹⁾ A survey by British Rail, a census by W. Alexander and Sons (Northern) Ltd., a survey for this Report by Aberdeen University students, and information from the Manufacturing questionnaire.

⁽²⁾ Some firms in the region with special labour needs do provide transport for their workers over considerable distances. Such cases are exceptional but they do provide evidence of a disposition on the part of labour to move around if transport facilities are convenient and cheap.

known that firms are frequently reluctant to take on men over the age of 50, and that indeed by that age many men present difficulties of employment where training in new skills is required. Hence on grounds of age alone, in the North East the pool of unemployed male labour likely to attract incoming employers would drop to, say, 2,000.

8.37. As might be expected from the age structure of the unemployed, the duration of unemployment is also greater in the North East for men. But, rather unexpectedly, it is true for women also. The duration of unemployment is shown in Table 8.20; from there it appears that the North East figures for those unemployed more than 26 weeks and for more than 52 weeks are above the British, though below the Scottish, figures.

8.38. Thus about 2,000 men presently out of work could be employed without undue prob-

8.39. The quality of labour in the North East is generally held to be extremely high, a fact corroborated by incoming firms, and by the frequent recruiting visits of outside firms from the south. While individual firms within the area do occasionally find themselves short of skilled labour, there are no enduring shortages as there tend to be in other parts of the country. In June 1966, when just over 100,000 men were employed in the North East, nearly 2,500 were out of work, while the figure for unfilled vacancies was just over 700; this was a ratio of unfilled vacancies to unemployed of 0.28 which compared with the British figure of 1.1. For women in the North East there were 1.2 vacancies for each woman unemployed compared with the British figure of 4.0 to one.

8.40. Information on the experience of a small number of incoming Manufacturing firms in the field of recruiting, training and maintaining

TABLE 8.19
*Analysis of Unemployed by Age: Percentage of Total Unemployed,
July 1968*

	Aged 50 and over			Aged 55 and over		
	M	F	T	M	F	T
North-East Scotland	% 39.9	% 17.5	% 35.3	% 30.9	% 9.2	% 26.4
Great Britain	55.4	21.4	32.9	27.6	11.8	25.2

TABLE 8.20
*Analysis of Unemployed by Duration of Unemployment: Percentages of Total in
each Group, July 1968*

	Unemployed for over											
	4 weeks			8 weeks			26 weeks			52 weeks		
	M	F	T	M	F	T	M	F	T	M	F	T
North-East Scotland	% 69.7	% 64.2	% 68.6	% 56.8	% 50.5	% 55.3	% 55.8	% 24.9	% 33.5	% 28.6	% 11.6	% 18.7
Scotland	n.a.	n.a.	n.a.	60.8	57.7	60.1	36.2	28.9	34.7	21.5	12.9	19.5
Great Britain	73.1	63.6	71.6	60.4	49.5	59.7	33.8	22.7	31.7	18.0	10.9	16.9

lems for employers. On the whole, however, they will be unskilled, since skilled men are seldom unemployed for long in the area. To this total could be added the annual 1,300-1,400 male migrants who might be happy to stay in the area if suitable jobs were available. For women, on the other hand, the unemployment register considerably understates the pool available for work, for if suitable work were available more women would certainly enter the labour force. It is true that in some parts of the region a ceiling has probably been reached for trades such as food processing and hotel work; but for a different type of work there may be a latent labour supply even in these areas. As it was, in July 1968 there were 850 women unemployed, and to these might be added the 650 women workers who leave the region each year.

their labour forces has been made available to us.⁽¹⁾ From this, it appears that the labour force of such firms is usually recruited locally; only about one-quarter to one-fifth of the workers in the firms concerned had their previous employment more than 20 miles away. Recruits to these new firms were drawn from many quarters, but Construction and the Primary industries were the largest single industrial sources, followed by school-leavers and the transport industry. The nature of the skill required in the new industry also determined the industries from which the new labour force was drawn—for example, the more skilled the industry, the more qualified craftsmen it would draw from the Engineering and electrical

(1) By the Department of Social and Economic Research of the University of Glasgow.

industries, or from Shipbuilding and marine engineering. Of the labour force recruited by one firm, as much as one-quarter were skilled workers who had served their time with other firms. The experience of these firms shows that local labour is easily trained in new skills and operations, and that once a firm has acquired its labour force, it does not have much difficulty in retaining it. Rates of turnover, for example, are extremely low: while the national rates of turnover (supplied by the D.E.P.) show losses of about 2.5 per 100 workers, for an average four-week period, some incoming firms in the North East are showing losses of this order for one year.

8.41. Finally, wages in the North East. It has already been stated above that the region is a low-wage area. This is a view which is widely accepted though hard evidence to support it is lacking. It is, however, almost certainly true. For one thing, such low-wage industries as agriculture, Textiles, Food, drink and tobacco, Construction, Miscellaneous services and Distributive trades are heavily represented in the region. Indeed, with the exception of Paper and Shipbuilding, the North East is poorly supplied with high-wage industries. Secondly, not only is there this predominance of low-wage industries, but evidence suggests that wages in the North East are below the average even for these industries. This is to be expected since there is a lack of competition from high-paying industries. The Manufacturing questionnaire showed that in October 1966, out of twelve of the S.I.C. categories for which there was information, in seven categories every firm was paying its men an hourly rate below the British average. For women, the situation was better in that only in four out of the twelve industrial groups did every firm pay below the British average. For eleven of the twelve categories, however, at least 70% of all the firms paid below the national average for women.

Summary and Conclusions

8.42. The main points of this chapter may be summarised as follows:

- (i) The employment structure of the North East is marked by a heavy dependence on the Primary industries and Construction, with a correspondingly low dependence on Manufacturing. The Service sector employs a somewhat higher proportion of the labour force than in the country as a whole.
- (ii) In the first half of the 1960s employment in the Primary sector declined considerably. In Construction it grew very markedly and in Manufacturing quite noticeably.
- (iii) Although total employment in the North East increased between 1961 and 1966, male employment declined.
- (iv) Activity rates in the region are below the corresponding national rates and this is due only to a minor extent to the age structure of the population.
- (v) From a projection of the supply and demand for labour up to 1976, it is estimated that a minimum of 8,000 new jobs will be needed, over and above those projected on current trends, in order to stabilise the regional population by that year. Of these jobs about 6,500 will have to be imported from elsewhere.
- (vi) Training facilities in the area are good but fewer boys enter apprenticeships or equivalent training in the region than in the country as a whole.
- (vii) Travel-to-work distances in the region are generally short, but this may be partly accountable to a lower average level of wages.
- (viii) The unemployed of the region tend to be rather older, and to contain rather more long-term unemployed, than the national average. But they contain a pool of suitable potential employees.
- (ix) All the evidence suggests that the labour of the area is adaptable and highly trainable.

Agriculture in the North East

DAVID C. CATT and A. M. MORGAN REES

Introduction

9.1. The North East is an important agricultural area containing about a quarter of the Scottish area of crops and grass and employing over 20% of the agricultural full-time labour force of Scotland. Within the North East it is a major employer of labour accounting in 1965 for nearly 11% of total male employees and just under 2% of employed women. If we add that there are almost as many farmers as there are employees it is clear that agriculture is one of the largest economic activities of the region. The main purpose of this chapter is to describe the present trends in the industry with particular emphasis on those which bear most closely on the number of people employed in the industry. A brief description of the actual pattern of production is followed by an examination of recent changes in the numbers of farm holdings, in the numbers of farmers and in the employed labour force. The overall object is to attempt some forecast, however uncertain, of the 'release' of labour from farming.

The Pattern and Trends of Production

9.2. It is probable that between a fifth and a quarter of Scottish agricultural output is produced within the North East, but the comparative significance of different products varies widely. Thus in 1967 the region contained a third of the barley and oats acreage of Scotland,

and over 40% of the acreage under turnips and swedes. On the other hand it had only 17% of the main-crop potatoes, 16% of the vegetables and 12% of the wheat acreages. As far as livestock are concerned nearly a third of the beef cattle and 43% of the pig population of Scotland were in the region. On the other hand it contained only 9% of the dairy cattle and 8% of the sheep.

9.3. To illustrate the relative importance of the different enterprises within the region standard outputs have been calculated from Agricultural Census data.⁽¹⁾ These are crude measures but do give some indication of the relative importance of each enterprise. They show that beef production is by far the most important enterprise, although cereals, taken together, have a greater standard output. Potatoes and sheep are surprisingly low in importance measured in this way, but are nevertheless vital enterprises in the region.

9.4. In order to trace the trends in production and the variations of trend between different parts of the region the statistics provided by the June Agricultural Census were used. To get a better picture of constituent parts

⁽¹⁾ The standard output is an estimate of the value of annual output per acre of a crop, or per head of livestock. It is based on national average yields and average prices. This measure has obvious limitations but is probably the only satisfactory common economic denominator.

TABLE 9.1
Agricultural Importance of N.E. Scotland, 1967

	All Scotland	Five counties of North East	North East as % of Scotland
	Thousand acres		%
Crops and fallow	1,524	441	28.9
Grass	2,767	576	20.8
Rough grazing	12,240	799	6.1
Total agricultural area	16,531	1,767	10.7
	Numbers		%
Full-time employees	44,284	9,276	20.9
Part-time and casual employees .	10,022	1,540	15.4

Source: D.A.F.S.

of the region the parish data for selected years were grouped so that parishes of similar farming type were examined together.⁽¹⁾ Map 9.1 illustrates this grouping.

TABLE 9.2
*Standard Output of Cash Crops and Live-
stock, N.E. Scotland, 1966*

	£ thousands	%
Cash Crops		
Wheat	330	0.8
Barley	7,100	16.5
Oats and mixed grain	4,210	9.8
Potatoes	2,960	6.9
Sugar Beet	9	0.0
Fruit	140	0.3
Vegetables	280	0.7
Total cash crops	15,029	35.0
Livestock		
Beef	10,220	23.6
Dairy	5,510	12.8
Sheep	2,410	5.6
Pigs	5,180	12.2
Poultry	4,590	10.6
Total livestock	27,870	63.0
Grand Total	42,899	100.0

Cropping

9.5. The overall trends in cropping between 1950 and 1967 are summarised in Table 9.3.⁽²⁾ From this it can be seen that the largest movement has been away from root crops towards grass, with cereals showing a slight decline in relative importance to 1960 and a similarly slight recovery since then.

TABLE 9.3
*N.E. Scotland: Trends in Cropping Pattern
1950-67. Percentage of Crops and Grass Area
in each Type of Crop*

	1950	1960	1967
Cereals	35.4	32.6	34.0
'Roots'	14.5	11.2	8.7
Fruit and vegetables	0.1	0.2	0.2
Grass	49.6	56.5	56.7
Other	0.4	0.5	0.4
Total	100.0	100.0	100.0

9.6. Within cereal production the most notable trend has been the changeover from oats to barley. This really got underway in the late 1950s, and by 1965 there was a greater area of barley than oats for the first time. Since then there has been a much lesser increase in the barley

area. There have been two main causes of this change. First, new varieties of barley have been introduced which yield well under conditions hitherto more suitable for oats; and secondly, barley is well suited to combine harvesting with its lower labour requirements. This trend from oats to barley has taken place elsewhere in Scotland, but the North East now grows a greater proportion of Scotland's cereals than it did in 1950. Within the North East the trend has been least marked in the upland parishes (see Appendix Tables D.2 and D.3) though there has been a very considerable decline in cereal production in these areas. Wheat, incidentally, is a very minor crop in the North East though it is of some significance in the richer arable areas. Overall, it is probable that the total area planted to cereals may have reached its limit in the lowland areas; in the uplands it may continue to decline further.

9.7. The period 1950-67 has seen a dramatic decline in the acreage of root crops. High labour costs and uncertain yields are characteristics, common to all root crops, that have influenced this decline. In addition the competitive position of potatoes, both seed and ware, from the region, appears to have worsened, though the decline in the acreage in the North East has been similar to that in Scotland as a whole. Within the region the decline has been least in the richer arable areas. Turnips and swedes, long important as winter feed, and still remaining so to a greater extent in our region than elsewhere, have nevertheless declined by 40% over this period: silage, which requires less labour, is replacing the turnip. Within the region the decline of the turnip crop has proceeded at slightly different rates so that now it is more important in the uplands, and the Aberdeen, Banff and North Kincardine lowland areas, than elsewhere in the region. The future outlook seems to be for a continuing slow decline in the potato acreage, particularly in the less fertile areas. But the downward trend in the turnip acreage, on the other hand, may be halted in the future since modern seedling, weed control and harvesting techniques are reducing the labour requirements of the crop, so making it more competitive with silage as a winter cattle feed. However, it is unlikely to return to its previous position of importance.

9.8. Fruit and vegetables contribute only about 1% of the output of agriculture in the North East; but their economic importance is perhaps greater than this because of their association with the food-processing industry. This industry is discussed later in this chapter, but much of the analysis here is relevant to the arguments developed in that section. The vegetable area as a whole has increased by about 60% since 1950, to reach some 1,900 acres; but this has not affected all crops uniformly. 'Other vegetables', which include fresh vegetables for local consumption, have declined. Pews, on the other hand, have increased from a negligible area in 1950, to over a thousand acres in 1967; but nearly all of the production of this crop is in Kincardine and processed outwith the region. In the late 1950s and early 1960s

⁽¹⁾ Details of the basis on which parishes have been grouped are given in Appendix D1.

⁽²⁾ More detailed cropping statistics are given in Appendix Tables D.1, D.4 and D.5.

there was a significant area of peas grown in the Buchan area of Aberdeenshire to supply a local processing plant; but disease and other problems caused this venture to fail. Locally-grown carrots and beetroot also are sometimes processed, but a large proportion of the output goes to the normal vegetable trade. It is of interest to note that the acreage of carrots increased from 293 to 394 between 1967 and 1968.

9.9. Fruit growing in the region is also partly dependent on processing. The total acreage has risen from 222 in 1950 to 359 in 1967. The main increase in recent years has been in strawberries; raspberries reached a peak around 1960 since when they have been declining. Within the region the main areas of concentration are Moray and Kincardine, with the former more important for raspberries and the latter for strawberries. Production in Kincardine is mainly processed outwith the region. Future trends in the production of both fruit and vegetables depend largely on the activities of processors, and further discussion of this is deferred until later in this chapter.

9.10. There is one final trend in cropping to be noted. Between 1950 and 1967 the grassland acreage increased from just under 50% of crops and grass to nearly 57%. At the same time, the area of permanent or older grass declined in the period up to 1960, and subsequently rose substantially (see Appendix Table D.5). There has also been a steady increase in the area of grass for mowing which coincided with the substitution of silage for turnips. The acreage of grass for silage increased six-fold between 1951 and 1966, to reach 72,000 acres (see Appendix Table D.6). This trend may well continue, possibly leading to a decrease in the hay acreage, which in 1966 stood at 98,000 acres.

Livestock

9.11. Two thirds of the standard output of farming in North-East Scotland comes from livestock production. Beef cattle alone account for nearly one quarter of the total output; dairy cattle, pigs and poultry come a long way behind this, but each is more important than any single cereal crop with the exception of barley (see Table 9.2 above).

9.12. The beef enterprise of the North East is complex and can be divided into several sectors.

The first is the production of beef animals from breeding herds located within the area, and these further subdivide into three types: upland beef herds, lowland beef herds and dairy herds. The second major sector is the rearing of calves produced outside the area, often on dairy farms in southern Scotland and England and Wales. These calves are brought north when a week or so old and hand reared. The third and possibly largest sector is the feeding and fattening of beef cattle. Supplies of cattle to this sector come from both of the sectors already described, but also from Ireland, and from hill herds outwith the North East. It is extremely difficult to get a complete picture of this intricate structure as no records are available of flows of cattle into and out of the area. An attempt has been made, however, in Diagram 9.1 to plot the flows of cattle in the North East for a recent time period. Dairy cattle are included in this as they are, of course, a source of beef calves.

9.13. Two important changes in the structure of the beef enterprise since 1950 have been an increase (from negligible proportions) in the inflow of young calves, and a substantial increase in the breeding herd. The beef cow herd has almost doubled since 1950 and most of this increase is due to an increase in herds eligible for Hill Cow Subsidy. The upland area has a comparatively high proportion of the breeding stock and an even higher proportion of the cows receiving Hill Cow Subsidy (see Appendix Table D.7). It also has a low proportion of feeding and fattening animals. Another area where breeding is important is the Moray and Nairn lowland area. The dairy areas have a higher proportion of beef calves than of breeding stock since they tend to rear the excess dairy calves for beef. It is not possible to pick out any area that specialises in rearing calves not bred locally. Fattening cattle not bred on the farm is an important activity throughout the region except in the uplands, but it is particularly important in the lowlands of Aberdeen, Banff and North Kincardine. The North East has a high reputation for the production of quality Scotch beef which commands a premium on the Smithfield market. Moreover, with the growth of supermarkets close links have been forged between slaughtering organisations in the region and retail outlets in England. There is little doubt that beef feeding will remain one of the major

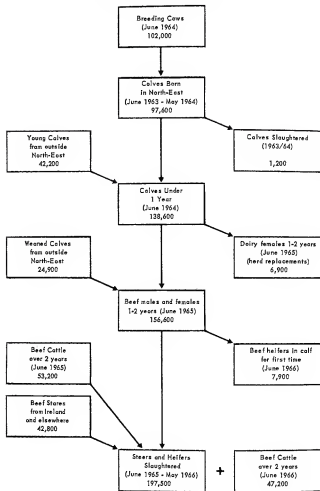
TABLE 9.4
Breeding Cow Statistics: N.E. Scotland
(breased herd)

	1950	1955	1960	1965	1966	1967
Total breeding cows	91.6	102.1	114.8	120.4	122.6	123.2
Dairy cows and heifers	48.7	46.1	44.7	42.5	41.3	40.7
Beef cows and heifers	42.7	56.0	70.1	77.9	81.3	82.5
Cows receiving Hill Cow Subsidy	n.a.	18.6	36.4	51.3	55.7	58.1

Note: n.a. signifies not available.

Source: D.A.F.S.

DIAGRAM 9.1
*The Inflow and Outflow of Cattle:
 North-East Scotland 1964-1966*



Notes: See Appendix D1 for sources of above data.

agricultural activities in the area and that its future is relatively bright.

9.14. In dairying, despite the decline in dairy cow numbers, there was a gradual increase in total production from 1955 to 1967. There has been a movement towards a concentration of the industry in the hands of more specialist units (see Appendix Tables D.8 and D.9). The average size of dairy herds in the North East is already higher than in England and Wales or in southern Scotland, but the movement towards larger herds and a smaller number of registered milk producers is likely to continue. Such herd expansion involves considerable capital expenditure, particularly in modern buildings, but usually results in an increase in labour productivity.

9.15. Sheep accounted for under 6% of the total agricultural output of the region in 1966, and the future is unlikely to see an increase in this proportion. Between 1950 and 1965 there was an increase in the numbers of breeding ewes, to a peak of 280,000. Since then there has been a slight drop in numbers which under

both the intra-regional distribution of breeding sows and the percentage change over the 17-year period from 1950. The largest relative increases in sow numbers have occurred in the areas furthest from the bacon factory and where there were relatively fewer pigs at the beginning of the period. Future prospects for the pig enterprise in the region seem bright and the proximity of an efficient bacon factory certainly contributes to this optimism.

9.17. The final livestock enterprise to look at is poultry. The fortunes of this sector of farming in the region have not been very bright and there has been a decline in most classes of poultry since 1950 (see Appendix Table D.13). Generally, there has been a trend towards specialist units and away from the 'farmer's wife' type of enterprise; but future prospects are likely to continue to be poor. Egg-producing fowls have decreased considerably in number over the period and have probably been most influenced by the trend towards specialist units, although over half the birds are still in flocks of under 375 birds, and the average flock size at

TABLE 9.5
Pig Statistics: N.E. Scotland
thousand head

	1950	1955	1960	1965	1967	1968
Sows and gilts	7.3	11.3	14.4	25.8	25.5	31.3
Bacon	0.6	1.0	1.1	1.7	1.6	2.2
Other pigs 2 months and over	27.7	69.4	65.6	133.8	130.6	150.6
Other pigs under 2 months	10.9	27.5	29.2	58.1	55.7	69.2

Source: D.A.F.S.

the present economic climate is likely to continue. The problem is largely one of price, but coupled with this is the fact that the productivity of sheep is not as easily raised as that of most other livestock enterprises. The number of ewes receiving Hill Sheep Subsidy has risen only marginally. Much of the increase in ewe numbers was on lowland farms. Appendix Table D.11 shows both the intra-regional distribution of ewes and the intra-regional changes in the numbers in the period from 1950 to 1967. The future for sheep is uncertain, but the next few years may well see a reduction in sheep numbers throughout the North East if there is no increase in price.

9.16. In pig production the North East offers a prime example of the catalytic effect of a vigorous processor. Lawson's bacon factory at Dyce has since the war offered a stable and expanding outlet for pig meat, with the result that the North East is now the most important single area in Scotland for pig production. The upward trend is illustrated in Table 9.5 where it can be seen that all classes of pigs have increased considerably in number since 1950 despite the operation of the pig cycle with its troughs and peaks. Appendix Table D.12 shows

the June Census, 1965, was 120 birds. The only class of poultry which has shown any increase during the period of this study has been broilers: these almost doubled between 1960 and 1967, to reach a total flock size of 813,000. It is interesting to note however that over half of the 1965 broiler flock (of 685,000) was concentrated in two firms.

Land Resources and the Structure of Farming in North-East Scotland

9.18. Before examining the structure of North-East farming a word is called for on the agricultural area of the region. Statistics are available for both rough grazing and the crops and grass areas; but due to difficulties of definition the rough grazing statistics are not accurate enough to detect any major trend. The crops and grass area on the other hand is more accurately enumerated (see Appendix Table D.14), and the chief point to notice is that in spite of the movement of land out of agriculture into other uses, the area of crops and grass is rising slightly. But it is worth remarking that the gains come from the reclamation of marginal land, mostly stimulated by Government grants through

the Farm Improvements and similar schemes, while some of the losses of land, notably those to urban development, are often better land.

TABLE 9.6
Net Losses of Agricultural Land in North-East Scotland, 1961-62 to 1965-66

	Acres
Roads, housing and industry	1,342
Recreation	227
Forestry	12,361
Other	592
Total	14,522

Source: D.A.F.S.

However, most of the net loss has been to forestry, and much of this is land of little real agricultural value. The total area lost, taken as a percentage of the total area of crops and grass, is a relatively insignificant figure; indeed this trend could go on for nearly 40 years at the 1961-66 rate before 1% of the crops and grass area was lost from agriculture.

The Number and Size of Farms in the North East

9.19. Since the publication of the White Paper on the 1965 *Annual Review and Determination of Guarantees* (Cmd. 2621) considerable stress has been placed on the need for up-to-date information on the structure of British agriculture. Such information is of importance not only to the policy-maker, but also to the economist as a tool for projecting the future pattern of farming and of the farming population.

9.20. The size of a farm business can be measured in various ways, but whatever criterion is applied difficulty arises over the definition of a 'farm' and a 'farmer'. The annual June Agricultural Census, however, does provide statistics relating to the number of agricultural units in Scotland, and the relevant figures for the region are set out in Table 9.7. (Figures for each county appear in Appendix Table D.15.)

9.21. Up to 1957 farmers made a return for each piece of land shown separately in the valuation rolls. Since 1957, however, farmers have been asked to make only one return for two or more farms or lands which are worked as a single agricultural unit. This change led to a substantial reduction in the number of returns and an apparent decline in the number of units; this accounts for a large part of the decline in the number of units in the years immediately following 1957. It is thought, however, that most units which are farmed together are now making only a single return. If it is assumed that the more recent trend represents the actual decline in the number of agricultural units, and not paper amalgamations, then the decrease between June 1965 and June 1968 amounted to 481 units for the

TABLE 9.7
Number of Agricultural Units in N.E. Scotland

Year	No. Units
1950	15,578
1955	15,134
1956	14,940
1957	14,600
1958	13,540
1959	12,636
1960	12,537
1961	12,442
1962	12,221
1963	12,102
1964	11,422
1965	11,269
1966	11,099
1967	10,918
1968	10,788

Source: June Agricultural Census.

region as a whole—an annual rate of decline of 1.4%. By 1968 the total number of agricultural units remaining in the region was just short of 10,800. But it should be stressed that the recorded number of agricultural units is not the same as the number of businesses or the number of farmers, since some businesses consist of several units which are run quite separately, and some units have no farmers as such.

Acreage Classification

9.22. The agricultural units enumerated in the Census vary greatly in size as measured by their relevant acreages of crops and grass.⁽¹⁾ Many agricultural units are very small holdings which cannot be regarded as representing significant farming units. The farm acreage which is required to provide a full-time livelihood for a farmer obviously varies according to the intensity of land use, and it is difficult to put a minimum figure on the area needed to occupy one man on a full-time basis. But few holdings in the North East which are below 50 acres in size are likely to be other than part-time or spare-time holdings. In the 1966 Census, 44% of the agricultural units in the region were smaller than 50 acres, but they accounted for only 8% of the acreage of crops and grass. At the other end of the scale, 5% of holdings were large farms of 300 acres and above in size, and these occupied 24% of the crops and grass acreage. There was some tendency for the proportion of large farms to be greater in the counties of Kincardine, Moray and Nairn than in Aberdeen and Banff.

9.23. The fall in the total number of agricultural units, has affected the different size groups of farms in different ways. In recent years most of the disappearance of agricultural units has consisted of holdings of under 20 acres; but there has also been a marked decline in the groups between 20 and 99 acres. The 100-299

⁽¹⁾ Appendix Table D.16 provides an analysis of agricultural units and crops and grass acreage by crops and grass acreage size groups, for the region.

acres group has remained relatively static, while there has been a most noticeable increase in the number of holdings of 300 acres and over. This process of amalgamation of smaller units, leading to the creation of larger-scale farms is, of course, by no means confined to the North East; but it is having a marked effect on the structure of farming in the region.

9.24. Another method adopted to measure the size of a farm business is to calculate the *standard labour requirements* for the cropping and stocking of a farm, using as the unit of measurement the *standard man-day*. (Details of this method of classification are given in Appendix D1.) For many years the Department of Agriculture and Fisheries for Scotland has undertaken analyses of the results of the June Census and this work allows an examination of the size of holdings in the region measured in terms of standard man-days, for the years 1962 and 1967. These figures are given in Table 9.9. The number of full-time holdings in the North East has been falling by some 270 per annum—an average rate of decline of 3.5% a year. Between 1962 and 1967 the number of part-time units declined by 322, but there was a counterbalancing increase of 375 in the number of spare-time units. Thus the non-full-time sector remained approximately stationary. Of course, the concept of full- and part-time holdings is not a static one. With increasing labour productivity, resulting from mechanisation and

other capital investment, the acreage and stock which can be looked after by one man is increasing steadily and, accordingly, many of the smaller full-time units are likely over time to descend into the category of part-time units. Some of these smaller full-time units and others in the part-time category will also figure prominently in amalgamation arrangements. On the other hand many small crofts in the environs of Aberdeen have become residential holdings occupied by urban workers who now farm on a spare-time basis, and this may portend a future trend.

9.25. The 1967 classification of farms in Scotland provides a detailed breakdown of full-time farms according to man-day size groups. The man-day size group of 251–600 comprises those holdings which require one to two men, possibly with the assistance of some casual labour, to run them. Taking the region as a whole, over 50% of full-time holdings fell into this size group which was the predominant one in each county. At the other end of the scale, 16% of all full-time holdings required more than 1,200 man-days per annum, equivalent to 4 or more full-time men. There was a higher proportion of these larger full-time units in Kincardine, Moray and Nairn than in Aberdeen and Banff.⁽¹⁾

(1) Full-time farms were further sub-divided into eleven main types. Appendix Table D.17 shows full-time farms in the region on this classification.

TABLE 9.8
Analysis of Agricultural Units by Crops and Grass Acreage Size Groups and Changes in Number of Units, 1962 and 1966: N.E. Scotland

Size group of crops and grass	1962		1966		Change in number of units	
	No.	%	No.	%	No.	%
0–19½ acres	3,731	30.5	3,161	26.4	–570	–15.3
20–49½ acres	1,956	16.4	1,710	15.5	–245	–14.3
50–99½ acres	2,994	24.5	2,706	24.4	–286	–9.6
100–299½ acres	3,655	24.9	2,972	26.7	–683	–2.7
300 acres and over	445	3.7	548	5.0	+102	+22.9
Total	12,221	100.0	11,099	100.0	–1,122	–9.2

Source: D.A.F.S.

TABLE 9.9
Classification of Holdings by Standard Labour Requirements, N.E. Scotland, 1962 and 1967

	Full-time		Part-time		Spare-time		All holdings	
	1962	1967	1962	1967	1962	1967	1962	1967
Aberdeen	4,368	4,036	1,420	1,225	1,385	1,776	7,773	7,061
Banff	1,240	1,041	372	301	406	399	2,018	1,741
Kincardine	817	762	150	132	198	197	1,165	1,091
Moray	625	531	156	124	240	224	1,021	880
Nairn	185	147	29	23	35	35	249	205
Region	7,835	6,479	2,127	1,805	2,259	2,634	12,221	10,918

Source: D.A.F.S.

Farm Amalgamations

9.26. Some of the decline in the number of agricultural units is accounted for by the amalgamation of holdings to create larger, more viable business units. In an attempt to explore the extent to which such amalgamation was taking place on estates in the North East a special Landownership Enquiry was embarked upon for this survey. All members of the Scottish Landowners' Federation located in the North East were listed, and this list was supplemented

by the names of certain other landowners. Postal questionnaires were circulated and eventually data were tabulated for 63 estates, covering 44.6% of the tenanted agricultural land in the region. Land use data for the 63 estates for 1960 and 1967 were obtained together with projections for 1975.

9.27. Inevitably some changes in the total acreages of the estates covered in the Enquiry occurred between 1960 and 1967, and others are projected for 1975. The overall acreage of

TABLE 9.10
Full-time Holdings by Man-Day Size Groups, N.E. Scotland, 1967
per cent of total

Man-day size groups	Aberdeen	Banff	Kincardine	Moray	Nairn	Region
251 to 600	52.5	53.0	40.9	45.6	40.1	50.6
601 to 1,200	32.6	34.3	35.6	34.6	32.7	33.3
Over 1,200	14.9	11.9	23.5	19.8	27.2	16.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: D.A.P.S.

TABLE 9.11
Landownership Enquiry: Land Use on 63 Estates

	1960		1967		1975	
	Acrea	%	Acrea	%	Acrea	%
<i>Land farmed by owner:</i>						
Crops and grass	22,428	3.9	25,947	4.6	30,356	5.5
Rough grazing	35,585	6.2	32,068	5.6	13,919	2.5
<i>Land let to tenants for agricultural use:</i>						
Crops and grass	167,168	29.3	160,836	28.2	155,967	28.3
Rough grazing	177,582	31.1	180,418	31.7	176,478	32.0
<i>Land in non-agricultural use:</i>						
Forestry	69,337	12.2	73,236	12.8	78,824	14.3
Other	90,756	17.3	97,462	17.1	95,586	17.4
Total	570,656	100.0	569,967	100.0	551,130	100.0

Source: Landownership Enquiry.

TABLE 9.12
Landownership Enquiry: Number of Tenants by Acreage Size Group of Crops and Grass

Size of holding	1960		1967		1975	
	No.	%	No.	%	No.	%
Under 50 acres	956	44.6	722	40.5	533	36.1
50-99 acres	598	27.6	477	26.7	397	25.8
100-149 acres	295	13.6	274	15.3	232	15.1
150-249 acres	256	11.8	249	14.0	263	17.1
Over 250 acres	51	2.4	62	3.5	90	5.9
Total	2,166	100.0	1,784	100.0	1,537	100.0

Source: Landownership Enquiry.

crops and grass farmed by the estate owners is increasing, indicating a tendency for larger acreages to be taken in hand. Rough grazing farmed by the estate owners is declining, but most of the anticipated decrease in this category of land by 1975 can be attributed to the projected sale of a large acreage on one estate. This projected sale too accounts for the overall decline in the total acreage covered by the estates. Some of the decline in the tenanted acreage of crops and grass can be accounted for by the corresponding increase in the crops and grass acreage in hand. The other noticeable trend is the increase in the acreage of land under forestry.

9.28. The Enquiry also yielded information about the number of agricultural tenants on the estates by size of holding. The number of agricultural tenants declined by 18% between 1960 and 1967; at the same time the tenanted acreage fell by only 4%. The annual disappearance of tenants averaged 55 per year, or a rate of decline of 2.5% per annum. From the projections made up to 1975 it appears that about 30 tenants may disappear each year representing an annual rate of decline of 1.7% between 1967 and 1975.

TABLE 9.13
Fate of Tenanted Farms Vacated During 1965-67

	No. of holdings	Total acreage
Sold	5	967
Taken in hand	42	3,346
Let to new tenants as existing holdings	58	5,593
Amalgamated and let to other tenants	28	5,930
Amalgamated and let to new tenants	11	1,454
Total	214	16,690

Source: Landownership Enquiry.

9.29. Information was also obtained about the fate of tenanted farms vacated over the two years prior to the Enquiry. During this two-year period, 1965-67, 214 tenanted farms were vacated on 42 estates. Table 9.13 shows that only about a quarter of all these vacated holdings have been re-let in their original form, whereas just over half have been amalgamated and nearly a quarter taken in hand. Almost all the amalgamations have been in the form of adding land to existing tenants' holdings, although there are a few cases where amalgamated holdings have been let to new tenants.

9.30. The Landownership Enquiry provided information relating to farm amalgamations in the estate sector, but to complete the picture we must examine amalgamations in other sectors. The D.A.F.S. collects information about sales of farms in the North East and these are categorised on the basis of whether they are for

amalgamation or not. During the four years, 1963-66, 615 farms of 20 acres or over were sold in the North East. From this it appears that only about 2% of agricultural units above 20 acres in size are sold in any one year. However, of those farms which were sold, 239 (or 42%) were amalgamated with other agricultural units.

9.31. If we now combine these two sets of amalgamation data, having first grossed up the amalgamation of tenancies on estates by a factor based on the acreages of these holdings covered by our Enquiry, it appears that during the two years 1963-67 there were possibly some 450 amalgamations. This represented an annual rate of decline in the number of agricultural holdings of just under 2%. This figure should be contrasted with a corresponding annual rate of decline of 1.6% for these two years based on the statistics relating to the total number of agricultural units derived from the June Agricultural Census. The difference may be accounted for by a number of factors: some bias in the sample of estates included in the Landownership Enquiry; the possibility of the farmhouse of an amalgamated farm, together with a few acres of land, still being regarded as a separate agricultural unit for Census purposes despite having become essentially residential; and the continuing practice of occupiers of amalgamated holdings of rendering two Agricultural Census returns each year.

The Number of Farmers

9.32. The only direct source of data for the number of farmers as distinct from the number of agricultural units, is the Population Census. According to this source the number of farmers, including managers, fell from 10,980 in 1961 to 8,630 in 1966—an average annual rate of decline in the number of economically active male farmers of 4.3%. However, farmers employing paid labour decreased in numbers more rapidly than the group which employed no paid, non-family labour. This may mean, first, that a large number of those farmers who employed paid labour in 1961 are now working their farms without such labour. Secondly, if one assumes that the decrease in the number of farmers employing paid labour has resulted in a movement of such farmers into the category of 'Farmers—own account with only family labour employed', then it would seem that a very large number of the farmers who were in this family-farming category in 1961 have moved out of farming or have become spare-time farmers, sometimes in semi-retirement, and no longer regard themselves as economically active in the industry. There may, however, have been a small movement of farmers from the family-farming category to the employers-of-paid-labour category as a result of amalgamations.

The Future Structure of Agriculture

9.33. The data so far assembled afford one basis for projecting the future trend in the number of agricultural units and of farmers; but there are additional factors which should also be taken into account. For example, under

TABLE 9.14
The Number of Male Farmers in N.E. Scotland

	Farmers (employers and managers)		Farmers (own account with only family labour employed)		Total	
	1961	1966	1961	1966	1961	1966
Aberdeen . . .	4,280	2,950	2,760	2,270	7,040	5,220
Barff . . .	980	990	610	540	1,590	1,530
Kinross . . .	840	580	280	340	1,120	920
Moray . . .	630	410	290	330	920	740
Nairn . . .	250	140	80	80	330	220
Total . . .	6,980	5,070	4,020	3,560	10,980	8,630
Annual rate of change . . .	-% -5.43		-% -2.29		-% -4.28	

Source: Population Census, 1961 and 1966.

the *Agricultural Act*, 1967, grants have been made available which, under certain circumstances, are available to farmers who relinquish uncommercial units for approved amalgamation.⁽¹⁾ Retirement grants and/or life annuities may be paid to outgoers and these vary depending on the size of the holding and the age of the outgoer. The Act also provides grants of 50% towards certain expenditure incurred in carrying out approved farm amalgamations and boundary adjustments. However, a counter-balance to these grants may be provided by Part III of the *Agriculture (Miscellaneous Provisions) Act*, 1968. Certain provisions of this Act provide greater security of tenure to successors to agricultural tenancies who are near relatives of the deceased tenant. Thus the landlord's right to give an incontestable notice to quit to a near relative successor to an agricultural holding is removed, although certain conditions must be present for this to apply.⁽²⁾

9.34. As the amalgamation grant schemes and the legislation relating to succession to agricultural holdings are relatively new it is difficult at this stage to gauge their impact on structural change. On the one hand, the amalgamation grant schemes will give an impetus to amalgamation and to the outflow of occupiers from uncommercial holdings, although the level at which grants have been fixed may not be sufficiently high to speed up the already existing rate of exit of such farmers. On the other hand, the new security of tenure legislation, although providing some restrictions on the security granted where amalgamations are proposed, may act as an obstacle to structural change. On balance these factors may well cancel each other out and we shall assume that for the purpose of projecting future trends they can be left out of account.

9.35. Projections have been made based on varying rates of change in the numbers of full-time, part-time and spare-time holdings. It has been assumed that the total number of agricultural units will decline at a rate of 2% per annum, while the rates of decline applying to full-time and part-time holdings will be 3.5% and 3% per annum respectively. In the case of spare-time holdings it has been assumed that these will increase at a rate of 2.5% per annum. These projections suggest that in terms of the number of full-time farm businesses the region is likely to be faced with a much reduced agricultural industry in 1975 and 1980. Possibly the number of full-time agricultural units will have dropped to 4,700-5,000 by 1975, and to 3,500-4,000 by 1980. The number of part-time farming units too will have become much smaller in number, while the spare-time ones will have become more numerous. Although the future structure of agriculture depicted by these projections has important implications for the number of farmers and the number of persons engaged full-time in the industry, it will not necessarily have a direct effect on the agricultural output of the region, or on the inputs required for agricultural production.

⁽¹⁾ Under these schemes an 'amalgamation' is defined as a change of ownership or tenancy (or both) of agricultural land which has the effect of bringing into single ownership and occupation an uncommercial unit and other land, so as to create or enlarge a commercial or intermediate unit. For these purposes a commercial unit is regarded as one which, under reasonably skilled management, will provide full-time employment for two people, or has a standard man-day requirement of 600 a.m.d.s. or more. Again, an uncommercial unit is regarded as one capable of providing at least 100 and not more than 600 standard man-days of work, while an intermediate unit is an uncommercial unit capable of providing between 275 and 600 standard man-days.

⁽²⁾ Part III of the Act applies only to Scotland. A 'near relative' for the purpose of the Act is defined as a husband, wife, son, daughter, adopted son or adopted daughter of the deceased tenant. The greater security afforded is restricted in three sets of circumstances: (a) if the successor lacks sufficient training or experience to enable him to farm properly; (b) if the holding is less than a 'two-man' unit and the landlord wants it for amalgamation; and (c) if the successor already occupies a 'two-man' unit. If the Scottish Land Court is satisfied that any of these considerations apply, then they must consent to the operation of the notice to quit, unless satisfied that a fair and reasonable landlord would not insist on possession in which case consent must be withheld.

TABLE 9.15
*Projections of Numbers of Agricultural Holdings
in N.E. Scotland, 1975 and 1980*

Year	All holdings (-2% p.a.)	Full-time (-3½% p.a.)	Part-time (-3% p.a.)	Spare-time (+2½% p.a.)
1967	10,900	6,500	1,800	2,600
1975	9,150	4,700	1,400	3,050
1980	8,050	3,500	1,100	3,450

9.36. In 1967 full-time and part-time agricultural holdings totalled 8,300. This figure can be compared with the total of 8,630 male farmers shown in the Population Census of 1966. The rate of decline in the number of economically active male farmers in the period 1961-66 was 4.3% per annum which was a faster rate of decline than that in the numbers of full-time and part-time agricultural holdings. This can be accounted for possibly by the fact that a larger number of persons operating spare-time agricultural units were not enumerating their occupation as farmers in 1966 and were regarding themselves for Population Census purposes as being gainfully occupied in some other category. If this is the case then the sum total of full-time and part-time holdings shown in the projections given in Table 9.15 might represent the likely trend in the future number of economically active male farmers. It appears that the number of economically active farmers in the region in 1975 may amount to between 6,000 and 6,500.

Agricultural Labour Force

9.37. The total agricultural labour force consists of both agricultural employees and farmers, together with their wives. The data available relating to the number of farmers have been dealt with above and no further analysis of this sector of the agricultural labour force is necessary. As the Agricultural Census gives much greater detail than other sources of agricultural employment data all subsequent analysis

uses this source unless otherwise stated.⁽¹⁾ The June Agricultural Census data are sufficiently detailed to enable a study to be made of the structure of the labour force in terms of sex, full-time, part-time and casual employment and, to a certain extent, age. In addition, the use of individual parish data enables a study to be made of the trends in the labour force in selected parts of the region. Table 9.16 shows the labour statistics for the region in selected years since 1955.

9.38. The total employed labour force has fallen by 44.9% in the 13 years since 1955. The annual rate of decline has, however, increased from 2.2% between 1955 and 1960 to 4.8% thereafter. This decline shows little sign of levelling out. An analysis of the trends in the labour force is best dealt with by examining full-time male employees separately from other classes of labour, since full-time males constitute over 80% of the total. Here it is relevant to try to find out which section of the labour force is leaving and at what ages. Table 9.16 shows that there are now proportionately fewer youths and young men; but the total decline cannot be entirely a result of fewer youngsters entering the industry. In 1967 the Agricultural Census for the first time provided a more detailed age breakdown, and the figures for 1967 and 1968 are shown in Table 9.17.

⁽¹⁾ Appendix Table D.16 compares statistics relating to agricultural employees in N.E. Scotland derived from the Population Census, D.E.P. and the June Agricultural Census.

TABLE 9.16
Agricultural Employment in North-East Scotland, 1955-1968

Year	Grand Total	Full-time regular					Part-time			Casual		Total part-time and casual
		Total	Male			Female	Male	Female	Male	Female		
			Over 20	18-20	Under 18							
1955	18,296	15,880	11,654	1,252	1,517	1,457	494	403	1,333	186	2,416	
1960	16,296	14,206	10,965	1,007	1,155	1,079	500	440	927	223	2,090	
1961	16,659	13,799	10,692	965	1,086	1,056	516	472	914	358	2,260	
1963	14,630	12,701	10,134	776	1,030	841	454	430	803	183	1,869	
1965	12,724	10,989	8,944	633	750	662	356	581	759	219	1,735	
1966	11,631	10,118	8,580	532	620	566	360	557	640	156	1,533	
1967	10,816	9,276	7,634	478	472	492	385	578	591	186	1,540	
1968	10,089	8,571	7,312	406	385	468	348	515	673	182	1,516	

Source: D.A.F.S. (June Agricultural Census).

TABLE 9.17
*Age Structure of Full-time Male Agricultural Labour,
June 1967 and 1968: N.E. Scotland*

	65 years and over	45 and under 65	35 and under 45	25 and under 35	20 and under 25	18 and under 20	Under 18 years
	No.	No.	No.	No.	No.	No.	No.
Total number:							
1967	187	2,501	2,147	2,008	991	478	492
1968	199	2,453	2,019	1,779	852	406	385
Average number for each year of age:							
1967	—	125	215	201	198	239	189 ⁽¹⁾
1968	—	125	202	178	172	203	154 ⁽¹⁾
Percentage of total in each age group:	%	%	%	%	%	%	%
1967	2.1	29.3	24.4	21.2	11.3	5.4	5.4
1968	2.6	30.3	24.9	21.9	10.6	5.0	4.7
Percentage change between 1967 and 1968	+5.4	+1.9	+6.0	+11.4	+13.0	+15.1	+12.1

⁽¹⁾ Assuming an age range of 15½ to 18 years.

Source: D.A.F.S. (June Agricultural Census).

9.39. The detailed age structure and a knowledge of the total rate of decline of the labour force gives some indication of the age range of men leaving agriculture. It can be seen from Table 9.17 that the percentage change in numbers of full-time male agricultural workers between 1967 and 1968 varied considerably between the different age groups. It is possible to calculate the number of workers moving from one age-group category to another between these two years, and so determine the theoretical numbers of workers in each age group on the assumption that no movement out of the industry took place. The difference between this theoretical total figure for each age-group category and the actual 1968 data (shown in Appendix Table D.19) provides an estimate of the age structure of the annual loss of male workers from agriculture. It appears from such a calculation that the loss of agricultural workers between the ages of 18 and 65 amounted to 670 during 1967/68. However, this figure takes no account of net losses of workers under 18 years of age and over 65 years. It is evident that men of all age groups are leaving the industry, but there is a particularly noticeable drift from the land of men between the ages of 20 and 35 years of age. It is also apparent that significant numbers of school-leavers must be leaving agricultural employment within a year or so of entry since, for example, the number of boys entering the industry in 1963 and 1964 totalled 932 (see Appendix Table D.20) and yet by June 1965 there were only 730 employees in the under 18 age group. This can be explained by the fairly common practice in the rural areas of the North East of school-leavers finding agricultural employment until their parents think them old enough to fend for themselves in the towns.

9.40. The age structure of adult male agricultural employees in 1967 is compared, in Table 9.18, with the age structure of the adult male population in the North East as a whole

in 1966. In both series of data the age-ranges examined are from 20 to 65 years of age. It can be seen that agricultural employees are on average younger than the male population as a whole. This would confirm the conclusion that it is common for men in mid-career to leave agriculture for employment elsewhere.

TABLE 9.18
*Age Structure of Male Population and
Agricultural Employees in 20-65 Age
Groups*

Age groups in years	Percentage of total in each age group	
	Male population, 1966	Full-time male agricultural employees, 1967
20-24	11.8	15.0
25-34	22.5	26.3
35-44	22.5	28.0
45-64	43.2	32.7
Total 20-64	100.0	100.0

Source: Population (Sample) Census 1966, and D.A.F.S.

9.41. The decline in full-time male agricultural employees has been greater in the lowlands of Moray and Nairn and the non-dairying parts of lowland Banff, Aberdeen and North Kincardine than elsewhere. (Appendix Table D.21 indicates differences in the intra-regional distribution of full-time regular male agricultural workers.)

Other Classes of Agricultural Employees

9.42. It is interesting to notice (in Table 9.16) that although other classes of agricultural labour—full-time females and part-time and casual workers of both sexes—have diminished

slightly in importance, they still contribute 19.7% to the total labour force employed in agriculture. Within this group the full-time female labour force has declined very rapidly in absolute terms and now, at 470, is only a third of its 1955 total. The earlier importance of female labour may be due to the influence of the Women's Land Army which revived a tradition of female farm workers that survived for a while. Casual male labour has also declined fairly rapidly. On the other hand, part-time female labour and female casual workers have not declined appreciably. This is probably because this class of worker includes mainly farm workers' wives who have no alternative employment open to them locally. Part-time male labour has not declined as fast as full-time male labour, probably because this class of worker includes mainly semi-retired workers and perhaps some part-time farmers.

increased use of machinery is revealed by data from the Machinery Census carried out generally every three years. Certain modern labour-saving machines have been singled out for examination as examples to show how the pace of mechanisation has proceeded.

9.45. It appears that tractor numbers have now reached a maximum and have begun to decline, perhaps because they have become more powerful and farms have increased in size. There are increasing numbers of the more complicated machines to use with the tractor fleet: all the machines listed, apart from the combines, are dependent on the tractor for power. These machines have undoubtedly increased the productivity of labour and to some extent have replaced the labour that has been shed by the agricultural industry. Another possible way in which farmers may be coping with the loss of

TABLE 9.19
*Numbers of Certain Agricultural Machines in
N.E. Scotland*

Item	1956	1960	1961	1964	1967
Tractors	13,767	15,004	15,443	15,637	15,557
Combine harvesters	229	524	634	1,159	1,755
Dung spreaders	868	1,295	1,557	2,513	3,420
Potato planters	1,046	1,304	1,468	1,497	1,499
Complete potato harvesters	15	26	54	173	205
Forage harvesters	n.a.	149	656	1,420	1,996
Tractor-mounted loaders	1,574	2,128	2,647	3,445	3,899
Pick-up balers	170	504	890	1,030	2,719

Source: D.A.F.S. (Machinery Census).

Labour Productivity

9.43 Before we can consider future projections of labour losses from agriculture it is important to investigate the question of what effect the current 'drift from the land' is having on agricultural production, and how long it might continue at its present rate. Is the vastly reduced labour force producing as much as previously? This question is difficult to answer since the agricultural industry produces a heterogeneous mixture of products for which the only common denominator is the sales value. No reliable data are available relating to the net output of agriculture in the North East.

9.44. Wage rates have been increasing steadily in the agricultural industry thus tending to increase the burden of costs. This factor has stimulated the search for means of increasing labour productivity and reducing the regular labour force of farms. Farmers are now perhaps organising their labour more efficiently, replacing labour by more capital in the form of machinery and buildings (see Appendix Table D.22), adopting new techniques, replacing high labour-demanding enterprises by those that can be mechanised, and making more use of agricultural contractors (which economises labour and capital). The trend towards the

labour is by increasing their use of agricultural contractors. Data available, however, are not conclusive. Better organisation of labour has undoubtedly improved productivity, although again little data are available.⁽¹⁾ And, finally, improved technical efficiency has probably been a factor in improving productivity in most enterprises; for example, in the pigs and poultry enterprises food conversion efficiency has improved, while grazing livestock intensity has shown a marked improvement.⁽²⁾

The Future Labour Force

9.46. From the statistics examined in this chapter it appears that the number of full-time regular male agricultural workers has declined by nearly 40% between 1960 and 1968. This represents an average annual rate of decrease of 4.8%,⁽³⁾ but the rate in more recent years has

⁽¹⁾ A dairy enterprise study in the North of Scotland shows that man hours per cow per year have declined from 106 in 1953/54 to 73 in 1965/67 without affecting yield per cow.

⁽²⁾ Forage acres per livestock unit in the North East have declined from 2.09 in 1950 to 1.78 in 1966. This has been due to an increase in the production and/or utilisation of animal feed per acre, and an increase in supplementary feeding of concentrates.

⁽³⁾ This is a simple, not a compound, rate of decrease.

been considerably greater. On the basis of past trends it is possible to advance tentative projections relating to the future size of the regular male labour force. It has been assumed that labour-shedding by the agricultural industry will continue in future years, but that the rate of decline will not be as great as it has been in the immediate past. It is felt that if the current rate of decline of labour continues, agricultural output might well be affected and may lead to action by the industry—with Central Government support—to halt the loss of manpower. Moreover the opportunities of achieving continuing increases in labour productivity are becoming fewer. With these points in mind projections have been made on the assumption that the number of regular male workers will decline at a rate of 4% per annum.⁽¹⁾ These projections are combined with those made earlier, of the number of economically active

farmers in the region, to provide overall projections for the total agricultural labour force, and the results are set out in Table 9.20.

9.47. Currently the total size of the regular male agricultural labour force is just over 16,000. This includes farmers and employees. By 1975 our projections suggest that it may have contracted to slightly less than 12,000 men.

The Processing of Agricultural Products in N.E. Scotland

9.48. We conclude this chapter with some remarks on the significance of the processing industries for agriculture and the prospects for their further development in the North East. More will be said, particularly on projected growth, in Chapter 12, on Manufacturing. In 1966 one-third of all employees in Manufacturing in the North East were employed in the 'Food, drink and tobacco' group. Moreover, this proportion increased sharply, from 30% to 34%, between 1961 and 1966. Table 9.21 presents an overall picture of employment in the 'Food, drink and tobacco' group.

9.49. Some of the industries covered by the Food, drink and tobacco group are of little direct relevance to the agricultural industry of the region as the agricultural products processed originate outwith the area. Others, such as the drink industries, receive comment in the chapter on Manufacturing. Thus we are left with a small group of minimum list headings which are of direct concern to the agricultural industry in the region and these are dealt with below.

TABLE 9.20
*Projections of Total Male Agricultural Labour Force:
N.E. Scotland 1975 and 1980*

Year	No. of economically active farmers	No. of full-time regular male agricultural workers	Total size of male agricultural labour force
1968	8,000	8,100	16,100
1975	6,100	5,800	11,900
1980	4,600	4,600	9,200

⁽¹⁾ See p. 83, footnote ⁽¹⁾.

TABLE 9.21
*Employees (Including Unemployed) in the Food, Drink and Tobacco Group
in N.E. Scotland: 1961 and 1965*

Minimum list headings	1961			1965		
	Male	Female	Total	Male	Female	Total
Brewing and malting	47	22	69	95	20	115
Other drink industries	1,845	329	2,174	2,117	376	2,493
	1,892	351	2,243	2,212	396	2,608
Bread and flour confectionery	767	453	1,220	731	466	1,197
Ice-creams	6	26	32	6	27	33
Chocolate and sugar confectionery	4	19	23	7	25	32
	777	498	1,275	744	518	1,262
Food industries not elsewhere specified ⁽¹⁾	148	14	162	135	3	136
Total	2,817	863	3,680	3,089	917	4,006
Bacon curing, meat and fish products	2,182	4,188	6,370	3,004	5,047	8,051
Grain milling; Animal and poultry foods	505	99	604	507	87	594
Fruit and vegetable products	100	227	327	115	285	400
Milk products	64	24	88	63	41	104
Total	2,852	4,538	7,390	3,689	5,460	9,149
Grand Total	5,669	5,401	11,070	6,778	6,377	13,155

⁽¹⁾ Including 'Tobacco'.

Source: D.E.P.

Bacon Curing, Meat and Fish Products

9.50. Establishments classified under this minimum list heading increased their total labour force from 6,370 in 1961 to 8,050 in 1963, and therefore account for much of the growth of employment in this sector. Unfortunately the agricultural bacon and meat-processing industries are not separated from the fish-processing industry under this minimum list heading, and it is probable that some 75-80% of the employees in the Bacon curing, meat and fish products industries in 1963 were employed in fish processing. Nevertheless, the bacon-curing and meat-processing industries are vital to the well-being of North-East agriculture since they represent extremely important marketing outlets for the livestock sector of the agricultural industry of the region. There is no indication of any decrease in the output of the pig and cattle sectors in the foreseeable future. In fact the recent report by the Economic Development Committee for the Agricultural Industry has suggested that substantial scope exists for expanding the British production of bacon, home-bred beef and veal by 1972/73.⁽¹⁾ A measure of optimism can be felt regarding future prospects for the bacon-curing and meat-processing industries in the North East, particularly as the marketing of the high quality products representing the output of these industries is well organised.

Milk Products

9.51. The Aberdeen & District Milk Marketing Board operates in the counties of Kincardine, Aberdeen and Banff, while the North of Scotland Milk Marketing Board serves the balance of the region. Total employment in the manufacture of milk products in the North East is small and is likely to remain so. At the same time the processing plants which exist represent essential marketing outlets for the dairy farmers in the region and it is encouraging to note that a considerable capital investment programme has recently been undertaken.

Grain Milling: Animal and Poultry Foods

9.52. Employment in the Manufacturing industries covered by these minimum list headings was relatively static between 1961 and 1963. Some movement away from country milling towards concentration of manufacturing in the hands of centralised mills has occurred and this trend may well continue. These industries provide important outlets for grain produced in the North East; but much of the grain produced in the region is retained on the producing farms, home-mixed and used for feeding to livestock. However, with growth in the livestock sector there is likely to be a parallel growth in the demand for animal feed with a consequent stimulation of the manufacture of animal feeding stuffs.

Fruit and Vegetable Products

9.53. For all practical purposes there are only two major processors of crop products in the North East, one with a plant at Fochabers, and the other at Peterhead. But in addition there are operators concerned with pre-packing potatoes and in preparing seed potatoes for export. Employment in the manufacturing of fruit and vegetables increased considerably between 1961 and 1963, but according to D.E.P. statistics in the latter year it was only 400. It is possible however that this understates the number of people involved due to problems of classification.

9.54. A good deal of optimism has been expressed from time to time regarding the prospects for growth in this sector. At the same time it has been contended that a larger proportion of the raw materials currently required by food-processing firms in the North East could be obtained from local farms. One of the problems besetting the local production of crops for processing is the circular difficulty that farmers are unwilling to grow certain crops because no market exists, and no market exists because farmers are unwilling to produce the crops. The Peterhead processing plant buys a certain quantity of vegetables locally, mainly carrots grown on contract: there appears to be little difficulty in obtaining supplies and relationships with local growers have in the main been excellent. The Fochabers processing plant has a very wide range of product interests, but much of its raw materials is brought in from outwith the region. Generally, until a processor defines what he wants, when he wants it and what he is prepared to pay for it, it is extremely difficult for the farmer to say whether it is a practicable and an economic proposition to grow what is wanted in any given circumstance or location. Again, until it has been demonstrated that it is possible to produce the raw material at an economic price, processors will be chary of ploughing in the capital necessary. Recently, in an attempt to break out of this difficulty, the Food Processing Sub-Committee of the North-East Consultative Group asked these two main processing firms to set out the range of products which they were prepared to buy if supplies at reasonable prices were forthcoming, and this list has been placed before a meeting of representatives of the three N.E.U. Area Committees which cover the North-East area.

9.55. However the potential market does not seem to be particularly large, and at the moment, apart from a requirement for raspberries for canning, there is no indication of any major development. There may, however, be some small increase in the quantities of products such as beetroot and mushrooms produced locally and sold to the processors. A demand for some 700 acres of soft fruit for processing has been assessed whereas only just over 100 acres are being grown at present between Fraserburgh and Inverness. The possibility of developing a potato canning industry is being examined currently, and potato processors may become interested in establishing a factory in the North East. Irrespective of such development, potatoes for canning and other forms of processing are

⁽¹⁾ *Agriculture's Import Saving Role: A Report by the Economic Development Committee for the Agricultural Industry: National Economic Development Office (H.M.S.O., 1968)*. A recent statement by the Minister for Agriculture appears to have endorsed the principle of this expansion, though not in the case of bacon.

likely to be grown in increasing quantities in the North East. Another factor that retards local production of raw materials for processing is the availability of relatively cheap back-load transport from the eastern counties of England. In the past this has applied particularly to beetroot production. One would therefore sum up by saying that while the processing of fruit and vegetable products are well-established industries in the region and have promising growth prospects, nevertheless their impact on primary agricultural production in the North East in the past, has been relatively slight, and the situation is unlikely to be very different in the future.

Summary and Conclusions

- 9.56. (i) Agriculture is one of the largest economic activities of the North East, employing directly over 10% of the male labour force of the region, and accounting for over one-fifth of the agricultural full-time labour force of Scotland.
- (ii) The agricultural output of the region in value terms is roughly one-third arable crops, and two-thirds livestock products.
- (iii) In recent years there have been some changes in cropping: barley has increased at the expense of oats; root crops, especially turnips, have declined considerably; and the fruit and vegetable acreage, although relatively small has increased.

- (iv) Amalgamation of farms is taking place, resulting in a decrease in the total number of agricultural holdings. This is affecting both tenanted and owner-occupied sectors, but the rate of amalgamation appears to be greater in the tenanted sector. Despite a decline in the number of part-time holdings there has been an increase in the number of 'spare-time' holdings.
- (v) The number of farm workers of all kinds fell by 45% between 1955 and 1968. The rate of decline in full-time male workers has accelerated to almost 5% per annum in the 1960s. It is clear that men of all ages are leaving the industry, with a noticeable loss in the 20-35 year age group.
- (vi) We expect the decline in numbers, both of employees and farmers, down to 1975, to continue, though at a somewhat lower rate than in the recent past.
- (vii) The food-processing industry is very important to the farm sector in some of its branches. This is particularly true of the processing of livestock products. We do not, however, expect more than a marginal expansion in the production of raw materials in the North East for local processing into vegetable and fruit products.

Fishing in North-East Scotland⁶⁰

JAMES R. COULL

Introduction

10.1. Fishing has a long history in North-East Scotland, and while it is in large measure up-to-date and progressive it faces some major problems. At present about 175,000 tons of fish are landed annually at ports of the area; this represents about £12 millions in value terms, and is 60% of total Scottish landings. By value about £1 million of these landings come from vessels based outwith the area, while North-East boats land about £3 millions at other ports. The locally based industry employs some 5,700 fishermen, or nearly 6% of the regional male labour force. But in addition there are some 11,000 shore workers engaged in occupations directly dependent on fishing.⁽¹⁾

10.2. Structurally, the industry is separated between catching on the one hand, and shore services and trades on the other, although there are some links at company level between the two. The catching side of the industry is further divided into (i) deep sea trawling, based mainly on Aberdeen, (ii) inshore fishing, in which the majority of the boats are based at the smaller ports around the coast, and (iii) coastal salmon fisheries, which are the least important of the three. There are basic differences of organisation between these three sections. The Aberdeen trawler fleet is owned by companies, some of which operate numbers of vessels. The inshore fleet, on the other hand, is generally owned by share-fishermen; while salmon fisheries are in the hands of small operators. Shore services and trades involve firms of a variety of sizes, although in fish processing and marketing there is a particularly large number of small concerns. The main efforts of the industry are now directed towards white fishing, by trawlers and seine-netters; but inshore vessels also catch herring,

sprats and shell-fish. The fleet as a whole is substantially modern and well-equipped; but while the inshore section is at present generally prosperous, the trawler fleet is meeting the difficulties common to this section of the industry. Harbours within the area is for the most part adequate, although shore handling and some port facilities are in need of improvement. But the necessary mobility of a considerable section of the fleet around the coasts of Scotland, and to some extent England, at different times of the year, involves difficulties for shore services.

10.3. There are, however, serious problems which are largely beyond the industry's own power to solve. These include the over-exploitation of fishing grounds and a level of costs which is rising more rapidly than the prices of the ultimate product. Another influence is a static or declining per capita consumption of fish in this and other countries. As a consequence, as in most other advanced countries the industry has become heavily dependent on capital grants, loans and subsidies from Government sources. Another difficulty which has emerged in modern times is the obtaining of a labour force which, in the face of the discomfort and danger of the occupation, is adequate in numbers and quality. The salmon fisheries face special difficulties in recruiting seasonal labour.

10.4. In making an assessment of the present state of the industry, there are certain statistical difficulties which make precise statements impossible. Only annual Scottish averages are available for the profitability of fishing vessels; figures of fish landings within the North East make no distinction between the vessels from which they come; while as well as changes in presentation, the boundaries of two of the six fisheries districts involved, those of Aberdeen and Lossiemouth, have been altered. In the case of the salmon fisheries, there are no aggregated statistics published for the area, and figures quoted are estimates based on information supplied by the trade.

Fishing Grounds and Landing Points

10.5. The main emphasis in all North-Eastern fishing is on quality fresh fish. Even the trawler fleet is predominantly a near and middle-water fleet, fishing the North Sea and Faroes grounds and landing its catch within a

⁽¹⁾ I am indebted in this chapter for information supplied by the Department of Agriculture and Fisheries for Scotland, and by numerous persons in the fish trade.

⁽²⁾ Figures of shore labour have been supplied by the D.A.F.S., and are based on statistics collected by Inspectors of Sea Fisheries. The categories adopted are not comparable with those used by the Department of Employment and Productivity, but all workers concerned with the fish trade are included. The main categories are fish workers, curriers and labourers, boat builders (including marine engineers) and clerks. Where firms are concerned with other activities along with those connected with fishing, estimates are made of the proportion of labour dealing with this industry.

comparatively short period of catching (but some trawlers do go to Iceland). Landings from trawlers at Aberdeen are running at about 75,000 tons per year, valued at around £5½ millions. The seine-netters, which form part of the inshore fleet, operate all round the coast of Scotland, and some 90 boats registered in the area operate permanently from west coast ports, while others range as far afield as the coast of Norway. An innovation of recent years has been the turnover of more than sixty boats in this section of the fleet to light trawling, for nephrops (the so-called 'prawns') as well as white fish. The total white fish landed annually by the inshore fleet is now of the order of 90,000 tons and its value is put in excess of £5½ millions.

10.6. The most mobile sector of all is the declining herring fleet. Here, the more modern and productive methods of pair-trawling and purse-seining are replacing the traditional drift-net. With the variety of landing points involved a precise estimate of the catch of the North-East boats is not possible; but we estimate it at about 50,000 tons a year, valued at over £1 million, of which less than a third is landed in the North East.

10.7. The commercial salmon fisheries are conducted for the most part with set-nets along the coast. The annual catch in the area is around 600 tons valued at about £350,000.⁽¹⁾ If the proposals of the recent Hunter Committee were to be adopted, salmon catching (other than by rod and line) would be confined to a single trap or point within each river, and one result of this would be a substantial decrease in the labour force.

The Fleet: Its Rebuilding and Composition

10.8. The total number of fishing vessels registered in the area in 1967 was 901, of which 110 were trawlers of over 80 feet in length. A further 486 were over 40 feet; boats of less than this size represent a very minor part of the effective catching power. The fleet is comparatively modern having been virtually rebuilt since the war with the help of the Government grant and loan schemes. By 1966 a total of 511 boats had been built, and 83 others reconditioned; and the fleet is now well equipped with modern fishing and navigational aids. Government financial assistance has undoubtedly promoted the modernisation of the fleet at a much faster rate than would otherwise have been possible.

Economics of Operation

10.9. Since the acceptance in 1962 of the Fleck Report, the trawler section of the industry has operated on a tapering subsidy. This produced about 5% of the gross earnings of this section in 1966, and was due to be phased out in 1972. This arrangement is now to be replaced by a new system announced in July 1968; at the time of writing the details of this had not been made clear, but it is stated that it will relate subsidies to operating efficiency. The

deep sea fleet has in recent years shown an increased efficiency as measured by the average catch per day's absence: this has risen from 41.0 cwt. in 1962 to 59.6 cwt. in 1966. Notwithstanding this, the profitability of operations has deteriorated. More generous aid for capital investment has been available since 1966, but it cannot be taken as certain that this—even in conjunction with the revised subsidies scheme—will solve all the problems of this section of the industry.⁽²⁾ The trawling section of the industry is being studied by the Industrial Reorganisation Corporation to see how far restructuring of the numerous trawler groups would assist the further development and modernisation of the industry. Any recommendations that the I.R.C. may make are bound to have repercussions of one sort or another on the Scottish section of the trawling fleet.

10.10. For the inshore fleet, social as well as economic factors determine subsidy policy; and while there has been some concentration of aid on capital investment, subsidy rates have been largely maintained. In general terms it can be said that the inshore fleet now produces an annual return which is sufficient to cover depreciation and give a reasonable return on invested capital. But operating subsidies have generally accounted for 10% of gross earnings and on occasion up to 15% for vessels under 50 feet.⁽³⁾

10.11. Table 10.1 summarises the earnings of the different classes of boats within the inshore fleet from 1961-65. Annual fluctuations make it essential to examine a run of years of this kind, and it should be noted that earnings have risen during this period at a rate which is probably untypical. It may be said, however, that a recent analysis has shown 1966 to be a very good year.

10.12. The high return of herring drifters is mainly due to lower running expenses. The white fish boats still contain a small number which employ great-lines for all or part of the year, and on these the earnings per man are affected by the fact that they require larger crews. Crew members with no share in boat or gear generally earn over £200 per year more on seine-netters than on drifters: this again is due to a difference in crew size—six or seven

⁽¹⁾ There are no published statistics for salmon fishing in the region. Figures given are estimates kindly supplied by Mr. A. McKendrick, Secretary, Salmon Net Fishing Association of Scotland.

⁽²⁾ For the assessment of the economics of operation it must be pointed out that the majority of available figures refer to totals and averages for Scottish vessels, and not just those of the area. In the case of the 'deep sea' fleet, these include a relatively small number of boats (about 20) operating from Granton.

⁽³⁾ In addition to the general difficulties already stated in assessing profitability, the position is further complicated in the inshore fleet as the methods used by the D.A.F.S. for grouping boats by sizes have shown several changes in recent years. Also, a considerable proportion of the fleet alternates between different fishings at different seasons, and in some cases several distinct types of fishery enterprise are grouped under one head. Finally the statistics relate to the whole Scottish inshore fleet and this includes boats on most other parts of the coast.

TABLE 10.1
Summary of Range of Annual Average Earnings of Scottish
Inshore Fishing Boats, 1961-65⁽¹⁾

Length of boat and type of fishing (1)	Gross earnings per boat (2)	Proportion of boats making profit (3)	% return on 'capital' ⁽²⁾ (4)	Profit in the absence of subsidy (5)	Labour share per man (6)
Under 40 ft./white fish	£3,750-£7,300	60%-80%	2%-20%	-£326 to -£134	£450-£800
40-60 ft./white fish	£8,200-£13,500	63%-90%	3%-24%	-£455 to -£15	£600-£1,000
60-80 ft./white fish	£13,000-£22,000	65%-85%	4%-25%	-£915 to +£943	£650-£1,100
60-80 ft./herring	£12,700-£19,700	80%-100%	10%-32%	-£382 to +£2,206	£580-£840
60-80 ft./dual herring-white fish	£10,000-£20,000	65%-90%	4%-25%	-£1,400 to +£1,100	£475-£920

⁽¹⁾ Calculated from figures supplied by D.A.F.S.

⁽²⁾ 'Capital' is taken as the average insured value of vessels—it does not represent the full capital employed.

compared with ten men. The actual average annual income of all fishermen is of course rather higher than the figures quoted, since they can draw unemployment benefit when bad weather keeps them in port. This can add as much as £60 a year to a married man's income.

10.13. Column 5 of Table 10.1 shows how precarious the economic position of the inshore fleet would be in the absence of operating subsidies. In effect it is these that permit share fishermen to accumulate sufficient capital to take advantage of grant and loan schemes for improvement. It is essential that returns comparable with those of recent years be maintained if recruitment is to remain at the level required to man the fleet, even if labour requirements decline. The prospects are for a continued increase in productivity, with such prospective improvements as machine gutting of white fish at sea, and the further development of trawling and purse-seining for herring. Even so the viability of the inshore fleet can hardly be said to be assured.

Employment

10.14. While the fishing industry is still a considerable employer of labour, both directly and indirectly, the total numbers employed have been steadily decreasing for half a century. The structure of the labour force reflects the structure of the industry as already described. On the catching side there are trawlermen, inshore men and salmon fishermen; and there is also the shore labour force, the size of which is more difficult to measure accurately as some of the firms which provide services for the industry are also engaged in other activities. Statistics of employment in the industry are available from the records of the employment exchanges and the annual returns of Fishery Officers. While some of the latter are estimates, they show employment by individual settlements, and are the only source of specific figures for the various shore occupations.

10.15. The trends in the numbers of fishermen by Fisheries Districts (and excluding salmon

fishermen), since 1938, are shown in Table 10.2. The table shows a decline of 40% in the number of fishermen between 1938 and 1967, with a drop of 35% since 1948. While there has been a rundown of the labour force in all districts with the concentration of the fleets and the trend to smaller crews, it has gone on at different rates in different places. By far the most severe fall has been in the Buckie district where there are now 63% fewer fishermen than there were pre-war. Formerly this was the main labour-surplus district within the North East for the herring fishery, with its men helping to crew the boats in other districts; and the change has been largely caused by the contraction in that fishery. But it has also been affected by the contraction in the Aberdeen trawler fleet, as a sizeable proportion of the trawlermen (perhaps 30-40%) at one time came from the Buckie area. The contraction of the trawler fleet has also adversely affected other districts, though to a much smaller extent. The Macduff district has the smallest reduction from pre-war, at 13%; and this is largely due to a combination of a lack of alternative employment, a greater survival of the herring fishery, and the outstanding enterprise of the village of Gardenvale.

10.16. Outside Aberdeen, the boats registered in each district are for the most part crewed by local men, although there has been some temporary migration, particularly of Fraserburgh men to work on the Macduff boats. Of the 1,569 registered trawlermen in Aberdeen in 1960, 269 had their permanent homes outside the city, 172 of them in the Buckie district. But there has been remarkably little permanent migration of fishermen to more convenient fishing bases. Much more serious losses have arisen from men going into other employment, often outside the region. There has been particularly heavy emigration from the Buckie district; it has been estimated that between 1951 and 1961 the burgh of Buckie alone lost nearly 400 men and 300 women of whom some came from fishing.

10.17. It appears that recruitment to the industry is adequate for present needs, but the

position may be altered by technical developments. In white fishing, much of the labour on board ship is required for the work of gutting: if current experiments to produce an efficient gutting machine are successful, it may be possible to reduce the size of crews by 20% or more.

10.18. Recruitment and training of crews is only on an organised basis in the trawler fleet. The annual recruitment and losses for this section of the industry, for the period 1962-66, are shown in Table 10.3. Actually the labour force is more stable than the figures suggest, as men may leave the industry at one time and return later. But clearly, losses are exceeding

10.20. The number of salmon fishermen in the North East is now about 600, and has also been decreasing. Recruitment here is especially difficult as the employment is for the most part seasonal. About 20% of the men—overseers, skippers and some others—have year-round employment with the maintenance of gear.

Shore Employment

10.21. Shore employment has declined less sharply since pre-war years: the figures suggest a drop of about 20% during the war years with a fairly steady total since then. In 1965, out of an overall labour force of 11,500, 9,715 were

TABLE 10.2
Estimated Numbers of Fishermen by Fisheries Districts, 1938-67

District	1938	1948	1960	1965	1967	Index for 1967 1938 = 100
Lossiemouth . . .	973	772	720	501	573	59
Buckle	1,569	1,153	767	582	609	37
Macduff	800	914	896	735	743	67
Fraserburgh . . .	1,244	1,154	938	835	850	68
Peterhead	866	1,033	736	516	519	60
Aberdeen	2,908	2,672	1,722	1,747	1,666	57
Gordon and Johnshaven	159	130	110	91	96	60
Total	8,569	7,748	5,909	5,083	5,116	60

Source: Scottish Sea Fisheries Statistical Tables.

TABLE 10.3
Aberdeen Trawler Crews: Recruitment and Wastage

Year	Recruits			Losses		
	Men	Apprentices	Total	Withdrawals	Retirements	Total
1962	215	84	299	215	14	229
1963	151	51	202	197	24	221
1964	72	35	107	184	21	205
1965	149	48	192	224	18	242
1966	175	54	229	362	16	378
Total	762	267	1,029	1,182	93	1,275

Source: Aberdeen Fishing Vessel Owners' Association.

recruitment and this rundown in the trawling labour force has been associated with the contraction of the fleet. There is, however, little evidence of a lack of berths for experienced men.

10.19. The rates of recruitment and loss for the inshore fleet cannot be established with precision. The total of school-leavers who take to inshore fishing as their first occupation is in the region of 50 per year, and of course some of these boys leave the industry within a few years. At the same time there is also recruitment of other young men. There are no available figures for losses from the inshore fleet, but it is known that a considerable number leave the industry well before retirement.

full-time employees (including 5,664 men and 4,051 women), 1,180 were part-time (290 men and 890 women), and 605 were principals. These figures, however, include about 300 people who were involved in the retail trade—fishmongers, fish hawkers, friers and the like.

10.22. Employment in Aberdeen has remained fairly constant at around 7,000 while the other districts have declined by varying amounts. The fall has been greatest in the former main bases of the herring fishery—Peterhead and Macduff—where other fishing developments have been absent. This contrasts with Fraserburgh, which also depended on the herring, but where there has been large-scale development of white fish processing.

10.23. There have been changes in the structure of the shore labour force, associated with the change in emphasis from herring to white fish and nephrops, with the expanding technical needs of the modern fleet, and with the more elaborate record-keeping now necessary. Thus the group of 'carters and labourers', who were more needed by the herring fishery, declined from some 2,250 in 1938 to 1,400 in 1965—a drop of 40%. Similarly, the number of coopers has fallen from 362 to 33 in the same period. On the other hand, the numbers in boat-building and marine engineering have risen from 1,091 to 1,691, and those of clerks from 499 to 968.

10.24. Table 10.5 shows the breakdown of employment of fish processing workers in recent years. Two-thirds of these workers are women, and part-time workers are important. Fish processing now entails mainly the filleting and packing of white fish, and development has concentrated in the Aberdeen and Fraserburgh

crews can vary from 24% at Whitehills to 42% at Sandend, and can rise as high as 50% at Findochty. Where there is more alternative employment the proportion is lower; an example of this is Peterhead, where it is only 18%. Fishing and fish processing together between them account for about 50% of the total employment in the coastal settlements of the Fraserburgh district. These estimates show that reliance on the industry in the coastal settlements is still very marked.

10.26. For the future, it seems probable that the rundown in employment in the industry will continue, although probably at a slower rate than the post-war average. The average post-war rate of contraction in the catching side has been of the order of 2½% per annum, and this has meant an annual decline of about 100 men per year in recent years. A projection of this rate in the fisheries other than salmon fishing would give a decline from 5,083 in 1963 to about 4,500 in 1970 and 4,000 in 1975. The

TABLE 10.4
Fishing: Numbers in Shore Employment

District ⁽¹⁾	1938	1946	1954	1965	1967	Index for 1967 1938 = 100
Lossiemouth . . .	477	400	303	318	311	67
Buckle . . .	806	602	515	579	539	70
Marshall . . .	565	177	219	214	225	38
Fraserburgh . . .	2,839	1,766	2,236	2,370	2,315	83
Peterhead . . .	2,270	2,067	820	908	890	40
Aberdeen . . .	7,061	5,951	6,967	6,927	6,476	98
Total	14,039	10,933	11,050	11,311	10,686	76

⁽¹⁾ Figures for Gairdoun and Johnshaven are available only for 1965 and 1967 when they were estimated at 133.

Source: D.A.F.S.

districts, in both of which this type of employment has about doubled since 1938. Largely as a result of the decline of herring curing, fish processing has contracted in all other districts. In both Aberdeen and Fraserburgh there is generally employment for all available workers; in Aberdeen especially there can be difficulty in getting enough labour, while Fraserburgh is probably near the limits of this kind of labour. Thus expansion in these trades would probably have to be in other districts. Enquiries for this survey suggest that the expansion of a few large firms has been mainly responsible for the rise in employment. It is also the large firms that envisage the greatest expansion in the future, and forecasts of labour requirements over the next ten years have anticipated increases as high as 70% in Aberdeen.

10.25. While there is no sure basis for comparing the degree of dependence on fishing in different districts and settlements, the managers of the employment exchanges have produced some estimates which can at least illustrate the position. Where fishing has persisted as the main employment, the proportion of the total insured population who are members of boats'

rate of decline has fallen somewhat in recent years, but there is the ever-present prospect of an acceleration due to technical developments.

10.27. The rundown of shore labour has been slower than on the catching side, with post-war employment fluctuating around the 11,000 mark. The most recent period, 1965-67, has seen a drop of 600 in this type of work, but this may be temporary. There has however been some increase in the numbers of part-time workers, particularly married women. Projection into the future, as always, is hazardous; but a figure in the 9,000-10,000 range might be the size of the shore labour force in the 1970-75 period.

Processing and Marketing

10.28. White fish processing consists mainly of filleting; but there is also, of course, smoking and freezing. The main expanding sector of the market now is in packaged and ready-cooked fish; but so far there have been very limited developments in this direction in the North East. Both the processing and the marketing side of the industry in the North East are

TABLE 10.5
Numbers of Fish Workers by Fisheries Districts, 1964-67⁽¹⁾

District	1964						1965						1966						1967					
	Full-time			Part-time			Full-time			Part-time			Full-time			Part-time			Full-time			Part-time		
	M	F		M	F		M	F		M	F		M	F		M	F		M	F		M	F	
Londemouth	54	74		—	14		60	81		10	18		44	65		16	23		40	79		10	6	
Buckle	96	60		2	40		32	69		2	40		34	68		—	23		50	68		—	3	
Machuff	90	5		—	22		53	5		—	20		36	5		3	22		35	5		6	22	
Fraserburgh	369	934		67	300		438	968		69	283		416	968		62	106		413	960		70	102	
Peterhead	66	286		49	155		75	312		32	187		67	264		35	105		64	245		28	104	
Aberdeen	1078	1850		67	298		963	1702		65	285		1014	1736		32	290		962	1480		44	550	
Total	1643	5130		105	629		1613	5137		198	855		1611	5126		168	630		1544	2947		158	667	

(1) Excluding Gourock and Johnstown: the numbers involved here are incomplete but in any case small.
Source: D.A.F.S.

dominated by Aberdeen, where the total annual value of landings exceeds £7 millions. This compares with an aggregate value at other ports of somewhere in excess of £4 millions; but a substantial part of this, perhaps one-half, comes to Aberdeen for processing. Fraserburgh takes another large portion of the processing of the area because of one large firm which moved there from Aberdeen because of lack of space for expansion. In the North East, processing generally concentrates on preparing fish, landed fresh, for market with minimum delay. Most cold stores ashore are geared to absorbing short-term gluts and smoothing the flow to the market. In the national context the region is the leading one for the production of quality white fish, although it cannot compete in total bulk of supply with the distant-water English ports. The area also has an important part in the national market for fresh and processed herring; and with the recent innovations in catching this is likely to be maintained. Recent developments have also meant that the fleets of the area are among the main British suppliers of the expanding market in nephrops.

10.29. In the post-war years the most vigorous growth in processing and marketing has come from the bigger firms, but a feature of the processing side of the industry is the continuing existence of a large number of small concerns. In Aberdeen alone there are about 250 firms, and there are also some in the smaller ports. A recent investigation suggested that greater size of firm does not necessarily reduce unit costs in Britain, and the internal economies effected by the larger concerns were to some extent balanced by the external economies enjoyed by the smaller ones. However, there is no question that the greatest enterprise, both in preparing and marketing fish, is shown by the larger firms some of which have multiplied their output by several times since 1950. In the case of the North East, however, a particular factor working against integration and rationalisation is the variety of fish landed both in species and size. This may continue to operate to some extent as a protection of the smaller firms; it is also possible that more knowledge of the financial aid available in the development areas, which is generally lacking in the smaller firms, would contribute to the greater efficiency of the smallest concerns.

10.30. The pattern of contacts of fish merchants with their markets is complex. Some small firms are geared entirely to local markets and there is a tendency for the smaller firms to sell mainly in Scotland; here Glasgow is by far the most important single market, receiving supplies landed by the North-East fleet on the west coast as well as within the area itself. However, the main markets are undoubtedly in England, which takes about two-thirds of the fish despatched from Aberdeen, and somewhere between 20 and 60% of that from smaller ports. Road transport is now the predominant means of distribution, a trend which was accelerated by the National Fish Plan of 1955, under which small parcels of fish ceased to be carried by rail.

Only London and regions served from it are now supplied by rail, the daily fish train from Aberdeen accounting for about 25% of the total quantity distributed. Cities as far away as Manchester and Birmingham are supplied by overnight lorry from Aberdeen.

10.31. Distribution costs from Aberdeen to English markets are inevitably higher than from the main English ports: a recent investigation showed, for example, that the average cost of carriage from Aberdeen to London is 1/9d per stone compared with 9d from the Humber. However, this is a small proportion of the total cost of the product, and is more than compensated for by the superior quality of fish from the North East. The extending motorway system, together with the use of larger lorries, will in the end reduce costs of distribution; and the use of liner trains should do so also.

Conclusions and Recommendations

10.32. For the future, fisheries will continue to play an important role in employment in North-East Scotland, and a role that will be especially important in certain places. In the national context this is the leading area in inshore fisheries, and plays an important part in the deep-sea sector. The area is at present the leading supplier of quality fish in Britain, and though the possible extension of the freezer trawler may have some effects on this position it is doubtful if it can overturn it. Of course, the policy of supporting the fishing industry is necessary, given the similar policies of other countries; and it can also be justified in the light of the support given to a competing industry such as agriculture. But it cannot be too often stressed that the industry itself must embrace every improvement of technology and organisation that presents itself. A willingness to experiment and search for new methods of catching, processing and marketing is absolutely vital. To particularise, the study made for this survey suggests the following conclusions and recommendations—

- (i) that continued Government support for fishing, in all its sections, is vital; and where this is now channelled through the White Fish Authority and the Herring Industry Board, there would be advantages if a single authority were responsible;
- (ii) that more modern types of processing and marketing fish, including those being developed by the Torry Research Institute, should be encouraged; and fish processing generally could be encouraged at some of the smaller ports;
- (iii) because of the long distances to market the situation of fish transport, both by road and rail should be put under continuous review.

The appropriate bodies to review and promote recommendations (ii) and (iii) would be the White Fish Authority and the Herring Industry Board, or any successor body.

Forestry and its Associated Industries

JAMES HENDERSON

Introduction

11.1. North-East Scotland has a long history of the practice of forestry and, associated with it, industries based on the use of forest products as raw material. Twice during the present century the demands of wartime arising from the restrictions on imports have made large inroads into the forests of the region; and within recent times (1953) a disastrous windblow led to further depletion of older plantations. On each occasion the strong tradition of forestry ensured the speedy and efficient replanting of large areas on private estates. The establishment of the Forestry Commission immediately after the First World War helped toward the planting of new forests and since the end of the Second World War the combined efforts of State and private foresters have resulted in the formation of substantial areas of plantations. The total area of managed forests in North-East Scotland is 241,500 acres and Map 11.1 shows their distribution within the region.

11.2. One effect of the heavy fellings in the two World Wars and the great gale of 1953 has been the removal of a large proportion of the mature stands leaving an age class structure with a preponderance of the younger age groups of trees. As is shown in paragraph 11.12 this situation will right itself in time, but for the present it creates problems for foresters and

wood-using industries which are discussed in greater detail later.

Employment in the Forest Industry

11.3. Although the forest industry is important to the region, forestry itself is not a major employer of labour. In 1966 the Forestry Commission provided employment for 570 men. Figures for private estates, which account for 42% of the total planted area, cannot be stated so precisely since many of the men concerned are not engaged solely in forestry work. Nevertheless information from a sample survey suggests that about 550 men are largely employed on forestry work on private estates. In the timber trade men are engaged in harvesting and extracting saw-logs and small round-wood⁽¹⁾ from the forest and work in the small portable, and larger permanent, sawmills. The number employed is estimated at 450 and there are also a few women doing associated clerical work. Once one moves away from the actual process of sawing timber practically all the wood-using industries, such as box-making, use both local and imported wood, and the people employed cannot be said to be wholly within

⁽¹⁾ A *sawlog* normally has a minimum top diameter of 7 or 8 inches and a minimum length of 10 feet. *Small roundwood* is the smaller material.

TABLE 11.1
North East: Areas of Planted Forests, by Counties, 1967
area in thousand acres

County	Forestry Commission ⁽¹⁾	Private Forests ⁽²⁾		
		Coniferous	Broad-leaved	Total
Nairn . . .	5.6	8.3	0.7	9.0
Moray . . .	36.2	25.3	1.7	23.0
Banff . . .	19.3	14.7	1.3	15.0
Aberdeen . .	63.3	36.6	5.4	43.0
Kingarney . .	15.1	7.1	1.9	9.0
Total . . .	139.5	90.0	12.0	102.0

⁽¹⁾ Areas shown are those at 30th September, 1967. Where a forest extends across a county boundary its total area has been attributed to the county containing the major portion of it.

⁽²⁾ Estimated total areas. Forests are attributed to the counties in which they mostly lie.
Source: Forestry Commission

the forest industry of the region. In total therefore between 1,500 and 1,600 people, most of whom are men, are employed in the forest industry of the North-East region.

11.4. In forestry most people are needed when establishing plantations and again when harvesting and converting small roundwood and sawlogs. Thus the number of men employed in the forest industry in the future depends on the size of the planting programme and the development of wood-using industries within the region. Because there is scope for more planting and new industry a slow but steady rise in the demand for men is forecast, to match the rise in production of wood; it should reach at least 1,800 by 1975.

The Forestry Commission Forests

11.5. The Forestry Commission has a total of 159,000 acres of land within the region, of which just under 140,000 acres are actually planted. The broad distribution of this planted area between the five counties, along with that of the privately owned forests, is shown in Table 11.1. Map 11.1 shows that most of the State forests—and practically all the big ones—lie in the upland parts of the region, within a broad belt running from Laurencekirk to Elgin. There are some important lowland forests such as those on the Moray coast; but elsewhere in the lowlands, in Buchan for example, there is only a scattering of rather small forests.

11.6. As can be seen from Diagram 11.1 below, a considerable proportion of the Forestry Commission land exists as relatively small, rather scattered plantations. Such a distribution materially increases operational costs, including those for timber extraction. Most of the plantable land at present held by the Commission has already been planted. The acquisition of further areas suitable for forestry, in the region, is becoming increasingly difficult especially if attention is paid to increasing the size of individual units and to avoiding further scattering of units. The inability of the Forestry Commission to buy plantable ground does not enable the Government's policy of afforestation to proceed at the planned rate nor the Commission's holdings to be materially enlarged and consolidated.

The Private Forests

11.7. The estimated total area of forests in private ownership is 102,000 acres. The annual rate of planting is some 3% of the total area and this is done to replace areas felled at maturity, to restock land which bears scrub and to afforest bare ground. Map 11.1 shows that the statement made about the scattered nature of the State forests can be made even more appropriately about the privately-owned plantations. State and private foresters recognise the need to consolidate the forests into larger blocks by planting more land adjacent to, or between, the

existing plantations, but substantial areas of forest will appear only if land used for hill farming and grouse shooting is released for planting trees.

11.8. On most private estates in the upland parts of the region forestry has been practised along with agriculture, grouse shooting and deer stalking for a long period. Hill farming, forestry and grouse shooting all occupy similar ground; the allocation of land to each has been fairly static for some years; and all three kinds of land use are considered by private owners to be normal and important. An owner's decision to plant more trees will be governed, first, by the current state, and future prospects for, hill farming and sport; secondly, by the amount and the cost of capital available for investment in forestry; and, thirdly, by the prices obtaining and expected in the market for forest produce.

The Enlargement of the Forest Area

11.9. The total land area of the five counties of the region is 2.3 million acres. Table 9.1 (above p. 71) reveals that 750,000 acres of land are classed as 'rough grazing', and much of this carries sheep and grouse, the higher ground above 1,500 feet being largely deer forest. The marginal character of some upland agriculture has already resulted in the transfer of areas of rough grazing to forestry, and there is evidence from Clashindarroch forest near Huntly and Glenlivet forest near Tomintoul that this can be done with benefit to both agriculture and forestry. But if care is taken in their siting substantial blocks of new forests could also be created without spoiling the better grouse moors. Afforestation of a further 100,000 acres would raise the percentage of land under forest to 15%, result in consolidation of the existing forests, and create steady employment for men in the remoter parts of the region. It is assumed that this additional acreage will be planted by the Forestry Commission and private foresters, and that due attention will be paid to the potential return from the investment.

Forest Produce and the Markets in the North East

11.10. It is in the nature of the forest industry, with its long cycle of investment and production, that potential output can be predicted with moderate precision. In Table 11.2 we show forward estimates of conifer log production from both the State and private sectors in the region, for the years 1970, 1975 and 1980.

11.11. These data are presented using three different minimum top diameters for logs to illustrate the very considerable differences which will occur in the volumes coming on the market, depending on what that market is and the extent to which it will be able to use smaller material. Sawmills in the region are already sawing some logs of 6 inch top diameter and this trend toward the milling of small sawlogs will continue. It may be noted that in 1980 the

TABLE 11.2
Conifer Log Production in the North East, 1970-80
thousand Hoppus feet over bark⁽¹⁾

Sector	6" Minimum Top Diameter			7" Minimum Top Diameter			8" Minimum Top Diameter		
	1970	1975	1980	1970	1975	1980	1970	1975	1980
State . . .	1,450	2,000	2,625	680	1,095	1,670	460	760	1,190
Private . .	3,620	3,820	4,310	3,170	3,280	3,450	2,665	2,785	2,890
Total . . .	5,070	5,820	6,935	3,850	4,375	5,120	3,125	3,545	4,080

⁽¹⁾ A 'Hoppus foot' is a measure of volume of timber, equal to 1.273 cubic feet. 'Over bark' means that the measure includes bark.

Source: Forestry Commission.

differences in totals available between the 6-and 8-inch minimum top diameter volumes is some 75%.

11.12. Three other points of importance for the development of sawmills in the North-East region are also revealed by the figures for 8-inch logs in Table 11.2. First, in 1970 86% of the larger conifer logs will come from private estates; secondly, the yield of larger sawlogs from private estates will fall between 1975 and 1980; and thirdly, during that same period the production of larger sawlogs from Forestry Commission forests will rise almost sufficiently to sustain the total yield for the region. This situation stems from the age-class distribution of the coniferous growing stock of the forests of the region. Seventeen per cent of the plantations on private forests are mature or over-mature and ready for felling, 32% yield sawlogs and small roundwood from thinnings, while 51% have not yet reached the thinning stage. The State forests also have a great excess of the younger age classes; but the wider use of spruces and the modern techniques of planting and thinning have resulted in the quicker appearance of trees capable of yielding sawlogs.

11.13. In addition to sawlog production very considerable quantities of small roundwood (that is material below sawlog minimum diameter, down to 3 inches top diameter) will be produced. In round figures it is estimated that the volume available in 1970 will be just under 5,000,000 Hoppus feet over bark and this will rise to 7,500,000 Hoppus feet over bark by 1980. It should be noted that these are estimated volumes down to 3 inches diameter, but there is nothing hard and fast about this figure and the limiting diameter will be that which industry can utilise economically, the volume available varying accordingly.

11.14. Present markets for forest produce exist in boat building, the Construction industry, box-making and pallets, telegraph and transmission poles, wood-wool, pulpwood, coal mining, fencing material and firewood. But because of transport costs not all these markets are available throughout the region. The sawmilling industry consists of twelve medium-

sized to small enterprises operating small portable mills and larger permanent mills. The age-class structure of the forests described in paragraph 11.13 means that many of the sawlogs coming on to the market for sawmilling are of relatively low quality, or are in the smaller diameter ranges and in the shorter lengths, and this makes it difficult to produce some of the larger and longer sizes of sawn timber that are in strong demand. Imported softwood is readily available to satisfy this demand. This situation will improve in the 1970s when a greater proportion of logs will be in the larger diameter classes and longer lengths.

11.15. The establishment of the pulp and paper mill at Fort William has created a market for small roundwood in the North of Scotland but unfortunately only part of our region, in the north west, lies within economic transport distance of this market. The mining timber market is a long-standing one which has provided an outlet for small roundwood for pitprops and for small sawn timber for other mining uses. With the contraction of coal mining, and especially of the Scottish industry, the demand for this product is decreasing. This change is a major factor in the evolving position of the forest industry, and it is recognised that other outlets for timber of this dimension will increasingly have to be sought. One market which has proved capable of absorbing a certain proportion of product of similar size classes to mining timber is that for wood-wool. However, transport to the market (which is in Northumberland) is likely to prevent any major expansion in this direction.

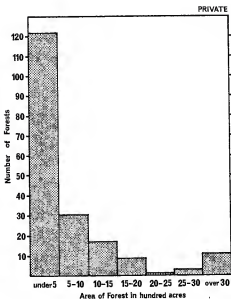
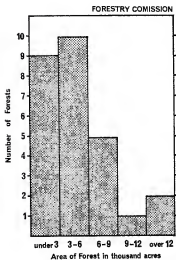
11.16. The boat-building industry of the North East provides a good market for high grade logs of larch and oak, many of which are brought from forests outside the region. Another strong local market is that for fencing material; this shows little sign of decline and consumes large quantities of small roundwood.

Future Markets and Developments

11.17. The forests already established in the region are estimated to be capable of producing

DIAGRAM 11.1

*Distribution of Forests by Size Class
(areas under tree plantation)*



270,000 tons of wet wood in 1970, rising to 380,000 tons annually in 1980. Very large quantities of wood and wood products are imported into Britain, the current annual value being £350 millions. The wood produced in the North-East region can satisfy a small part of the huge national demand if the costs of growing and harvesting trees, converting them into wood products, and transporting these products to the market, are studied and controlled. Because the volume of timber grown in Britain forms only 8% of the national need, the market price and quality standards for forest products are set by those for imports. Thus the goal for the forest industry of the North East is to penetrate markets largely held by imported wood products.

11.18. Several developments in wood-using industries within the region are possible. In the sawmilling industry benefits would accrue from a reduction in the number of sawmills, with concentration of the operations into fewer, larger units. At the same time improved arrangements for assuring a sustained supply of sawlogs from private forests would be needed, and the present investigation into the feasibility of a Forest Industries Consortium for the North East may well show the way to achieve this.

11.19. The general view on future demand for wood-based products is that the main growth will be in pulp and paper and wood-based panels. In both these sectors the industries concerned can use small roundwood and sawmill waste (consisting of slab offcuts and sawdust), and so would fit in with the pattern of the North East's forest produce. On the question of pulp production it appears that the potential output of roundwood in the region could not support a chemical pulp plant without the importation from elsewhere of a considerable proportion of requirements. The production of mechanical (ground-wood) pulp seems more feasible since this type of plant can operate successfully on a smaller scale; a further detailed study of the economics of this is therefore justified. The paper industry of the Don and Dee Valleys is of course a major user of chemical and mechanical pulp and this would clearly absorb most, if not all, of any locally produced pulp.

11.20. In the wood-based panel sector the three main types of product are fibreboard (both insulation and hardboard), particleboard and plywood. A plywood plant is not a realistic proposition for the North East, but both fibreboard and particleboard are worth further consideration. In both industries, as with pulp, the trend is towards larger production units; but the productive capacity of the forests of the North East could sustain a unit of a size which appears, at present, to be economic elsewhere. More investigation would be needed to establish the precise economics of such an undertaking; transport cost, particularly of the raw material, would be crucial, and this would impose very careful siting of the plant.

11.21. Given that the wood-using industries should be sited where transport, labour, power and raw material are available in sufficient quantity and at minimum cost, and that these industries must be integrated to achieve maximum economies, two areas of development and a possible third emerge. The first is the Aberdeen City region where there is a variety of established wood-using industries. Aberdeen is the main centre for imported timber and is well sited for communications with the south and north. There are also forests to supply the raw material and, as mentioned in paragraph 11.19, a mechanical (ground-wood) pulpmill attached to the existing paper industry appears feasible. The second area is Fochabers-Elgin-Forres. Already a sawmilling industry utilising home-grown softwoods exists in this area, and given an outlet for its waste—for example, an integrated particleboard plant—seems ripe for development and enlargement. There are already a number of wood-using industries in the locality, and while transport distances still tend to make delivered prices high, greater integration of the secondary industries should improve this situation. The third possible area for development is the Huntly district. While not having the same overall hinterland of forests as the Elgin area, it is near several of the larger forests and it is possible that sawmilling could be developed here, sending its waste to secondary industry either in the Aberdeen or Elgin areas.

The Social Value of Forests

11.22. So far the discussion has concentrated on forests as sources of wood and this remains the prime role of the forest industry in the economy of the region. But carefully sited and suitably managed forests produce additional benefits in giving shelter to buildings and farm animals, protecting water supplies and providing facilities for sport and recreation. Trees and forests appeal to a variety of individual tastes, providing a freedom to roam for young children and also a tranquillity which many older town dwellers have come to enjoy. Forests can cater for a range of interests often on quite restricted areas.

11.23. Such Forestry Commission forests as Speymouth (lying astride the main route north near Fochabers) already have an attractive aspect which could be further developed with lay-bys, car parks and marked walks within the forest. The remnants of the native Caledonian pine forest give a special quality to the upper Dee Valley and their regeneration would preserve an important part of the natural scene in Scotland. Other forests such as Blackhall (near Banchoory) are very beautiful and potential camp sites already exist within them. As is argued later (in Chapter 13) the changing character of tourism in the region calls for an increase in the number of camping and caravan sites. The Forestry Commission, and other forest owners for that matter, are well placed to play an important part in this—in association with the Countryside Commission.

Summary and Conclusions

- 11.24. (i) There is a strong tradition of forestry in North-East Scotland and the forest industry is important to the region.
- (ii) The number of people employed in the forest industry is between 1,500 and 1,600. This number will rise slowly provided more land is planted and new industry arises to consume the increased volume of wood available.
- (iii) The total area of Forestry Commission and private forests is 241,500 acres. It is recognised that new planting should be done to consolidate the resource. There is rough grazing land available for 100,000 acres of new forests.
- (iv) The annual yield of sawlogs and small roundwood will rise from some 270,000 tons in 1970 to 380,000 tons in 1980. The saw-milling industry can convert the sawlogs, but new markets are needed for the small roundwood.
- (v) The economics of a small ground-wood pulpmill attached to the paper industry in Aberdeen should be explored. The question of providing a board mill for the off-cuts and sawdust from the sawmills in Moray needs further study but appears feasible.
- (vi) Several of the Forestry Commission forests can be made more readily accessible for public recreation. The part that all forests can play in providing recreational and tourist facilities should be emphasized.

Manufacturing Industries⁽¹⁾

ALEXANDER G. KEMP

I. General Structure and Trends

12.1. North-East Scotland is not usually thought of as an important Manufacturing region; nevertheless it has a sizeable Manufacturing sector which, in June 1966, employed 40,300 people. This was 25% of the total employed labour force of the region, comprising 27% of the men and 23% of the women in employment. The comparable percentage for Great Britain as a whole was 38% (41% of male and 34% of female employment) so the picture of the region as being relatively weak in Manufacturing is not inaccurate. However, the sector has been showing signs of growth: the number employed in it rose by 1,800 during 1961-66 and this slightly raised its share of the regional economy. Also its annual rate of growth of over 0.9% per annum compared favourably with a comparable rate for Britain as a whole of under 0.2%.

12.2. Table 12.1 gives some indication of the recent changes in the structure of Manufacturing activity in the region. It can be seen that Manu-

facturing in the North East is heavily concentrated in a few main groups and the concentration has actually been increasing with Food, drink and tobacco notably increasing its share. The question of the desirability of a high degree of concentration in Manufacturing employment raises many issues, some of which are dealt with below in more detail. Normally, the concentration of employment in a few sectors in a region leads to an accumulation of skills which bestows some competitive advantage to it. There are, however, several other relevant considerations, such as whether the key sectors are expanding or contracting ones, and whether they provide the types of employment required to absorb the abilities of the labour force. A balance between male and female employment is also required. Yet another consideration is any change in the geographical pattern of employment—whether or not Manufacturing is becoming more concentrated in a few centres.

The Geography of Recent Changes

12.3. A picture of geographical changes in employment can be drawn from the returns from individual employment exchange areas. One drawback to this is that these returns are

TABLE 12.1
The North East: Employees in Employment in Manufacturing by Major Groups, 1961 and 1966

	1961		1966	
	Number ('000s)	Per cent of Manufacturing employment	Number ('000s)	Per cent of Manufacturing employment
Food, drink and tobacco	11.3	29.6	15.5	33.5
Paper, printing and publishing	5.9	15.3	6.0	14.9
Textiles	4.9	12.7	4.4	10.9
Engineering and electrical goods	4.7	12.2	4.9	12.2
Shipbuilding and marine engineering	3.3	8.6	2.8	6.9
Timber, furniture, etc.	3.0	7.6	3.0	7.4
Total of above	33.1	80.4	36.6	85.9
All others	5.4	19.6	5.7	14.1
Grand Total	38.5	100.0	40.3	100.0

Source: D.E.P.

subject to substantial margins of error because they are based on the annual exchanges of insurance cards, and changes in the number of cards exchanged at a particular office may be affected by purely administrative factors.⁽¹⁾ Another is that employment exchange areas may not—frequently do not—constitute reasonable 'economic units'. However, with these qualifications underlined, the actual statistics for 1961-66 are shown in Table 12.2.

⁽¹⁾ The reason for this is that some people work in areas other than that in which their insurance cards are exchanged. Subsequently they may be reallocated to another exchange office without their actual place of employment altering.

TABLE 12.2

Net change in Employees (including Unemployed) in Manufacturing Industries between 1961 and 1966 in Employment Exchange Areas of N.E. Scotland

Thousands

	1966		Change 1961-66	
	M.	F.	M.	F.
Aberdeen . . .	17.1	9.0	+0.1	+0.2
Banff . . .	0.4	0.1	+0.1	—
Peterhead . . .	1.7	1.6	+0.2	+0.1
Fraserburgh . . .	1.9	1.6	+0.3	+0.1
Elgin and Lossiemouth . . .	2.0	0.7	+0.4	+0.1
Keith . . .	1.0	0.3	+0.1	—
Buckie . . .	0.4	0.4	+0.1	+0.2
Turriff . . .	0.1	—	+0.1	—
Stonehaven . . .	0.2	0.1	—	—
Huntly . . .	0.2	0.1	—	—
Forres, Nairn and Grantown . . .	0.5	—	+0.1	—
Inverurie . . .	1.0	0.2	—	-0.1
Banchory . . .	0.1	—	—	—

Source: D.E.P.

12.4. So far as these figures can be accepted, they show some variations in the experience of different areas inside the region. There was a slight tendency during 1961-66 for the bigger centres to have the greatest increases; but no very marked trend towards any one centre is discernible. Looking at the region as a whole a certain amount of geographical balance in the growth of Manufacturing employment has been maintained. If we accept that, in the light of present Government policy, there should be a trend towards greater concentration of Manufacturing activity it is not so readily apparent from these figures which centres in the region are the most suitable for such development. At this point we can merely state it as a generalisation that quite independently of special measures the present trend for any growth in Manufacturing to be concentrated in fewer centres is likely to continue.

Changes in Employment by Sex

12.5. The balance between male and female employment is also of course important. From Table 12.2 it can be seen that employment opportunities in Manufacturing appear not to have expanded equally for men and women in recent years. It is noticeable, for example, that employment for men has expanded at a much faster rate in the Peterhead, Fraserburgh, Elgin and Lossiemouth and Banff areas, while in the Aberdeen and Buckie areas female employment has actually expanded faster. Whether these trends are desirable depends very much on the opportunities available in the other employing sectors. In the all-important Aberdeen area male employment in the Service sector has not been rising in recent years and the relatively small increase in Manufacturing is rather disappointing.

12.6. The net result of these changes in the geographical and sex distribution of Manufacturing employment, by 1966, is summarised in

TABLE 12.3

Employees (including Unemployed) in Manufacturing by Employment Exchange Area and Sex

	Males in Manufacturing	Per cent of total male employment in exchange area	Females in Manufacturing	Per cent of total female employment in exchange area	Total in Manufacturing	Per cent of total employment in exchange area
		%		%		%
Aberdeen . . .	17,117	29.23	8,984	24.6	26,101	27.45
Elgin and Lossiemouth . . .	2,018	23.8	748	17.7	2,766	21.6
Peterhead . . .	1,708	31.8	1,160	38.3	2,868	34.1
Stonehaven . . .	215	13.2	148	13.1	363	13.1
Huntly . . .	246	10.8	125	11.7	371	11.1
Inverurie . . .	1,019	34.5	194	17.5	1,213	29.7
Banff . . .	389	12.5	59	4.8	448	10.3
Banchory . . .	96	4.8	5	0.6	101	3.3
Keith . . .	1,027	44.5	300	27.4	1,327	38.9
Turriff . . .	99	7.7	27	4.7	126	6.8
Fraserburgh . . .	1,927	35.8	1,351	50.9	3,278	40.4
Forres, Nairn and Grantown . . .	469	12.75	49	2.6	518	9.3
Buckie . . .	446	16.4	390	27.7	844	20.3

Source: D.E.P.

Table 12.3; and the same reservations about the accuracy of the figures as applied to Table 12.2 also apply here. This table shows the varying importance of Manufacturing in different parts of the region. The significance of these variations for future developments is not immediately apparent. On the other hand the presence of Manufacturing in a locality over a number of years is likely to have generated some external economies, such as suitable service trades and a pool of labour accustomed to factory life and perhaps possessing skills useful for any subsequent developments. But an area where there is little Manufacturing activity could have a greater potential labour force for any new Manufacturing activity, particularly if no extensive training is required. Much depends on the type of industry concerned. Table 12.3 shows that the Aberdeen area accounts for an overwhelming

certain major groups is again illustrated in Table 12.4, though less strongly than before. There is a marked difference in the structure of some of these groups. Paper, printing and publishing, for example, has a fairly small number of relatively large firms while the Food, drink and tobacco group has a large number of small firms.

Trends in the Main Industries

12.9. A more detailed analysis of the position of the main industries is necessary before useful comments can be made about future prospects, but for the North East this presents serious problems due to the lack of data. The only published information available is that on employment, and even that is very suspect at minimum list heading level. Accordingly, a questionnaire was sent to all Manufacturing firms in the region

TABLE 12.4
Industrial Orders and Size of Firm in North-East Scotland, 1966

Industrial order ⁽¹⁾	Number of employees						Total
	11-50	51-100	101-250	251-500	Over 500	Unspecified	
Food, drink and tobacco	151	20	9	2	5	13	200
Chemical and allied industries	4	3	2			1	10
Metal manufacture	3	1					4
Engineering and electrical goods	19	6	1	3	3	3	35
Shipbuilding and marine engineering	19	4	2		2		27
Vehicles	6		1			1	8
Metal goods n.e.s.	9		1		1		11
Textiles	8	2	8	1	2	1	22
Leather, leather goods and fur, and clothing and footwear	3					1	6
Bricks, pottery, glass, cement, etc.	32	9	1	1		3	46
Timber, furniture, etc.	36	4	5			6	51
Paper, printing and publishing	16	3	3	3	4	2	31
Other manufacturing indust.	9		2				11
Total	315	52	35	10	17	31	460

⁽¹⁾ n.e.s. signifies 'not elsewhere specified'.

Source: D.E.P.

proportion of total Manufacturing employment in the region: 65% in 1966. This point is very relevant to the location of new activity.

Number and Size of Manufacturing Firms

12.7. A different aspect of the structure of Manufacturing industry in the North East is shown by the number and size of its firms. The D.E.P. have provided information about Manufacturing firms in the region employing over ten people. It is known to be incomplete, especially regarding recently established firms, but with this proviso it is presented in Table 12.4. From this it is very clear that the average size of firm in the North East is quite small. This is true even when the food-processing firms are excluded; and it would have been even more marked if firms with ten employees or less had been included. The concentration of activity in

employing over 10 people, and to a sample employing 10 people and under, requesting relevant data. Unfortunately the response was disappointing: only 127, or 27%, of the firms approached responded. This small response obviously introduces the possibility of much bias into any results. The responding firms actually accounted for 40% of Manufacturing employment in the region so that clearly the rate of response was better from the bigger firms in the area. Also, the respondents have been growing noticeably faster than non-respondents, indicating that they are probably more efficient. It might be thought that the firms which had some grounds to air would predominate among respondents, but other enquiries suggest that this has not been the case. Information from the questionnaires has been supplemented by a number of interviews, particularly with non-responding firms. The overall picture is still somewhat sketchy, how-

ever, and conclusions based on results from the questionnaires are generally tentative.

Costs of Production

12.10. Some limited information has become available from the questionnaires on the costs of production of Manufacturing firms in the region. Information on the structure of production costs in the North East would be very useful if it could be compared with similar data for other regions. Unfortunately this is generally lacking and so any conclusions are rather speculative. Taking raw material costs first, there is found to be a large variation in their significance among firms, ranging from well under 10% of total costs to over 90%. Considering the different types of industry in the region this is not very surprising. What is rather more unexpected, however, is the fact that there is sometimes a fairly big variation in the significance of these costs among the firms in any one main employing group. These groups are admittedly still somewhat heterogeneous but, for example, in the Engineering and electrical goods sector 30% of responding firms find that raw material costs comprise less than 10% of total costs, and 60% put them in the 20-30% range. The only main sector to show much uniformity is Food, drink and tobacco (especially in fish processing) where these costs are very important—accounting for between 60% and 100% of total costs for 75% of the responding firms.

12.11. In contrast with raw material costs the questionnaire revealed a much lesser degree of variation in the purchase of semi-manufactured goods. More than three-quarters of respondents found that these items constituted under 10% of total costs. The only sector where they are particularly important in the North East is Engineering and electrical goods where 60% of responding firms find that these items constituted between 50% and 70% of total costs. This obviously reflects the technical nature of the manufacturing processes.

12.12. Labour costs also vary significantly among the Manufacturing firms in the region. Wage and salary bills range from under 10% to nearly 70% of total costs. However, for nearly 60% of firms they formed less than 30% of total cost. Variations in the significance of labour costs are most pronounced between main employing sectors. They are relatively lowest in the Food, drink and tobacco group, where for four-fifths of the responding firms wage costs were less than 20% of total costs. This is rather unexpected since the food-processing sector has generally been regarded as fairly labour intensive, and the low wage rates of the North East should encourage it to be even more so. But the solution to the apparent paradox is to be found in fish processing where raw material costs comprise such a high proportion of total costs. The Engineering and electrical goods industries exhibit a different cost structure, with labour costs falling in to the 20-50% range for the great majority of responding firms; and in Textiles all the responding firms put their labour costs in this bracket. In

the Paper, printing and publishing group there was a big variation between firms, but labour costs were generally quite significant. It is rather surprising that paper-making firms should find labour costs so considerable, as they are usually regarded as a fairly capital-intensive industry. The industry has perhaps been less mechanised in the North East than in other parts of the country, but this would seem to be changing judging by the modernisation programmes which have recently been undertaken.

12.13. For regions such as the North East where many firms are situated a relatively long way from main markets the item of cost which is always given greatest attention is transport. The conclusion of the Tothill Committee on this matter was that "we found nothing in our inquiries to support the view that transport costs are a significant additional burden on manufacturing industry in industrial Scotland".⁽¹⁾ Is this true of the North East? For all responding firms a fairly wide variation in the importance of transport costs has been found, and this is illustrated in Table 12.5. Half the firms found their transport costs to be more than 3% of total costs. There were, of course, wide variations between individual sectors. The Food, drink and tobacco firms found it to be more important than most other groups, with more than half of them putting transport costs in the 3-6% range. This is probably because for many of these firms the final product is not of particularly high value and may often be fairly bulky. In Textiles transport costs are relatively very low, more than half the firms putting them at less than 1% of total costs. In the Vehicles group all the firms find that they are in this position, though this is because several sell mainly to the local market and the value of the final product is quite high. As might be expected, transport forms only a very small part of costs in Engineering and electrical goods, accounting for under 2% of total costs for three-quarters of firms. This will be due mainly to the high value-to-weight ratios of the final products. Some of the firms in this sector are fairly new, and in some cases the fact that transport costs were to be small was one of the factors which at least did not militate against their location in the North East. In Paper, printing and publishing, transport costs vary in importance reflecting differences in the nature of the product, but more than half the firms find that they are between 3% and 7% of total costs. In Timber, furniture, etc., transport costs are often high—they were over 20% of total costs in one case. It is at first sight rather paradoxical that sectors which are very well established in the North East—Food and drink, Paper, printing and publishing, and Timber and furniture—should have relatively high transport costs. But many factors contribute towards the location of Manufacturing activity, and proximity to raw materials is of course of prime importance in the food-processing and timber industries. The locational aspects of Manufacturing are discussed later.

⁽¹⁾ *Inquiry into the Scottish Economy, 1960-61* published by the Scottish Council (Development and Industry) : p. 75.

TABLE 12.5
*Transport Costs as a Proportion of Total Production Costs:
Distribution of Respondents to Questionnaire*

Percentage of total costs	0-0.9	1-1.9	2-2.9	3-3.9	4-4.9	5-5.9	6-6.9	7-7.9	8-8.9	9-9.9	10-11.9	12-14.9	15-19.9	20 and over
Percentage of firms	27.5	11.0	11.0	12.8	11.9	8.3	3.7	3.7	0.9	1.0	2.0	0	2.8	1.0

12.14. One way in which the burden of any extra transport cost may be reduced for firms in an area such as the North East is by suppliers selling throughout the country at uniform 'delivered' prices. Among our respondents 38% were able to make over 90% of their purchases at standard national prices, and nearly 44% bought between 70% and 100% on the same basis. But the significance of this factor varied greatly between industries. In Food and drink deliveries at standard national prices were generally unimportant, but in all other larger groups they were very significant.

12.15. Further analysis of costs on these lines would be unprofitable. In any case it must be emphasized that it is total costs which determine whether a region will be competitive or not. It may well be that transport costs are relatively higher in this region, but this may be offset by other costs being lower. In the North East wages and rents are often lower than in other parts of the country, though with our present information we cannot say whether these items fully compensate for the additional transport costs which some local industrialists regard as a handicap to location in the North East. The analysis does however direct our attention to particular cost factors which may be important in considering the development possibilities of the region.

Markets

12.16. Turning to the marketing side of local Manufacturing activity the first point to make is that the average sales of firms in the area are low compared with national figures. For example in 1966 over 40% of responding firms had sales of under £100,000. At the other end of the scale 12% exceeded £1 million in their sales and 4% exceeded £2 millions. (The bias of the firms surveyed towards the larger firms should be remembered here.) Markets themselves can be classified in a number of ways, two obvious criteria being geographical area and type of customer. Some estimates can

be made of the importance of various geographically classified markets for Manufacturing in the North East. Table 12.6 begins by analysing the importance of local markets. The interesting fact which emerges from this is that for local firms the North East was either of great or of very little importance; 35% of respondents sold under 10% of their output in the region while another 38% sold over 80% locally. This pattern was broadly repeated in the main employing group; but at this level the contrast can usually be related to the mixed nature of the groups themselves. Thus, in Food, drink and tobacco, most of the fish processors, whisky distillers and some of the other types of food processors, especially canners, are principally catering for markets outside the area; but there is also a number of often rather small firms, such as bakers, catering for the local markets. Similar patterns emerge in the Engineering and electrical goods and Paper, printing and publishing groups, and for the same reasons. In Vehicles half the responding firms sell between 90 and 100% output locally, reflecting their position as small, specialist firms. When size of firm (measured by turnover) is related to markets the relationship suggested above is generally borne out. Thus over 61% of the firms with turnovers exceeding £400,000 sell under 10% locally; on the other hand, only one-tenth of firms with a turnover of £200,000 or less fall into this class.

12.17. There was much greater uniformity among respondents regarding the importance of the rest of Scotland as a market. Nearly half the firms sold less than a tenth of their output in that area and over 70% sold less than 30%. At the other end of the scale only 5% of firms sold 80% or more of their output in the rest of Scotland. Most employing sectors broadly conformed to this pattern. The main exception was the Food and drink group, largely because of the activities of fish-processing firms geared to Scottish markets. Thus, Manufacturing in the North East is only moderately dependent on economic conditions in the rest of Scotland.

TABLE 12.6
*Distribution of Responding Firms by Percentage of Sales
in the North East*

Per cent of sales in the North East	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100
Per cent of firms	35	4	6	4	1	4	3	5	10	28

But this is less true of the rest of the U.K. For while the majority of our respondents sold less than a fifth of their output in this area, nearly 18% of them sold over 70% there. The importance of this market varies quite considerably between main employing sectors. It is important to firms in the Food and drink group and in the Engineering and electrical goods sector. Because of the activities of the paper-makers it is very important indeed to the Paper, printing and publishing group. As one might expect it is the bigger firms who find this market more important, and in fact it is clear that it constitutes a main market for such firms in the region. A consequence of this is that changes in economic conditions in England probably affect Manufacturing in the North East more strongly than changes in the rest of Scotland.

12.18. The last market to be considered is the international one. Of all respondents, 34% engaged in exports (outside the U.K.), a figure which seems commendable for a region like the North East. On the other hand export markets are of major significance to only a small number of firms. The best exporting sectors were Textiles where 38% of firms exported 50% and more of output, and Engineering and electrical goods where a quarter of the firms sent between 20 and 50% of their output overseas. As might be expected exports were relatively very much more important for larger firms.

12.19. The years 1960-66 saw considerable variation in the growth of sales among the responding firms. Some high performances were recorded. In the Food and drink group, for example, one-third of the respondents doubled, or more than doubled, their sales. The Engineering and electrical goods group also produced some fast growers, but here there was a long tail of moderate performers. Broadly speaking, growth in sales over this period was positively related to size of firm, as measured by turnover; declining sales were concentrated mainly among the smaller units and the outstanding performances among the bigger ones. But the correlation was certainly not perfect.

12.20. To sum up this analysis of sales figures, our admittedly partial information has suggested that although the local market is important, Manufacturing in the North East is to a very considerable extent dependent on exports to the rest of the U.K. and overseas. In fact this dependence seems to have been increasing in the past few years. This is because the bigger firms in the region have been growing faster than the smaller ones, so increasing their share of total output, and the larger firms tend to be much more dependent on distant markets. National and even international economic conditions now exert a strong influence on the fortunes of the local Manufacturing sector, and are certain to go on doing so.

Future Growth

12.21. What can we say about the growth of North-Eastern Manufacturing in the future? For policy purposes some idea of the likely size

and structure of this sector is important. For, quite apart from the jobs it provides directly, the sector is to some extent autonomous⁽¹⁾ and so helps to determine output and employment in other sectors of the regional economy. Forecasting on a national scale is difficult enough; forecasting one sector in one region with very sketchy information is much more so. In an area like the North East developments in a single industry could have a major impact on the region. The future of Manufacturing can be looked at under several headings such as employment, sales and capital investment. For the purposes of this survey the most relevant is employment, and the greatest amount of attention is devoted to estimating employment prospects. But the other variables have an important bearing on the matter.

12.22. The level of capital investment may give some indication of the prospects of an industry; but it is a better guide to output than to employment since part of its purpose may well be to substitute capital for labour. Also our data, drawn from the responses to the questionnaire, relate to individual years and these may give a misleading impression of trends in the industries concerned. With these qualifications in mind (and recalling again the bias in our respondents towards the larger and probably more efficient firms) what can be gleaned from our data? First, there are some indications of an increase in the level of Manufacturing investment in the period from 1960 to 1965/66. In 1960, for example, less than a tenth of the respondents spent more than £50,000 on capital equipment; in 1966 the proportion was twice as great. Of course, both trade cycle and price factors affect this type of spending; but the figures do seem to indicate some increase in the general level of Manufacturing investment. In 1960 the Food and drink firms accounted for a very considerable part of that investment; by 1966 this group was less predominant, although still containing nearly half of all firms spending over £15,000 on capital investment. However the pattern has become more diversified, with more investment recorded in the Paper, printing and publishing and the Bricks, pottery, glass and cement group. This in itself is a favourable factor, as also is the evidence that a very large part of this investment has been in plant and machinery: for nearly one-half of respondents 70% or more of their investment was in this category.

12.23. The evidence of a rising level and wider spread of capital investment in the North East, in recent years, is some indication that Manufacturing firms expect further increases in output in the next few years. But we did ask firms for estimates of their expected capital expenditure for the years up to 1970 and the answers—though extremely tentative and uncertain—pointed to a somewhat reduced rate of investment in the next few years; it is possible that in the absence of incoming industry there will then be some falling off in the rate of ex-

⁽¹⁾ That is, the sector makes up a good deal of the 'export base' of the region; on this concept see Appendix EI.

pansion. Looking at individual groups, Food and drink firms generally anticipated a reduced level of investment; the Engineering and electrical firms, as well as Textiles, appeared to foresee little change; while in the Paper, printing and publishing group the larger (paper-making) firms expected to increase their capital spending in 1967 and 1968, though some at least, expected it to fall by 1970. Slight declines from 1968 to 1970 are also forecast by the Timber and furniture firms. These tentative indications of an overall falling-off by 1970 should be borne in mind when other evidence on the likely progress of the Manufacturing sector is considered.

12.24. We found firms reluctant to forecast sales. Of those that did one-half expected growth from 1966 to 1970 to lie in the range 0-20%, and another fifth expected the increase to be between 20 and 40%. There were few divergences from this pattern between main groups, though in Timber and furniture some firms did expect much higher increases. The relationship between expected sales growth and size of firm was not nearly so positive as for the corresponding relationship in the period 1960-66.

A Forecast of Employment

12.25. The main practical aim of this study is to attempt to forecast employment in Manufacturing and the other indicators should mostly be regarded as a guide to this end. But forecasting for a region such as the North East presents a number of problems. The Manufacturing sector itself is small, and comparisons with national trends could easily mislead since the industry-mix of the area is quite significantly different from the national average. Also, because the industries are individually so small, trends in any one of them can be noticeably different from the national trend in the same industry. Finally, there is the all-important point that the constraints on the growth of national employment are tighter than on that of any one region: this affects the use of national growth rates as benchmarks for comparing or projecting regional rates. These points are very simply illustrated from the period 1961-66. Over these years Manufacturing employment in the region grew at an average annual rate of 0.92% compared with a

national rate of 0.18%.⁽¹⁾ In the Food, drink and tobacco group employment in the North East grew by 3.8% per annum while the comparable national rate was only 0.2%. This is an extreme example, but the difference was actually vital because of the tremendous importance of this group of industries in the North East.

12.26. A number of approaches may be taken to produce forecasts for 1970 and 1975. A useful first step is to make global estimates for the whole Manufacturing sector; such forecasts are more likely to be reasonably accurate than forecasts for any one industry, and this approach helps to put estimates for any single industry in proper perspective. Radical changes in the relative importance of the whole sector in the next few years are rather unlikely, though big changes in any of its constituent parts would be quite feasible. Estimates of total Manufacturing employment can be obtained by several methods. First, the rates of growth shown in D.E.P. figures, in the past few years, can be projected into the future. Secondly, firms completing the questionnaire were asked to make their own forecasts of employment, and while the low and therefore biased response impairs this data, it does provide a basis for estimation. Thirdly, a projection can be made using comparisons with past and expected national trends. The results of these approaches are summarised in Table 12.7; they should be compared with the 1966 total of employees in employment which, for the North East, was 40,300.

12.27. There is a considerable variation in the results obtained by the different methods and we must consider the most likely outcome. Despite the dangers already noted of comparing regional and national growth rates, can we make any deductions at all from national experience? There have been considerable variations in the growth of national Manufacturing employment in the last few years. A trend rate of growth can

⁽¹⁾ Wherever regional rates of change in employment are shown to two places of decimals, the second place is not to be regarded as reliable. The basic regional employment figures, as has been made clear, are subject to a margin of error. Nevertheless, for convenience of calculation a rate calculated to a second decimal place has been used for some projections.

TABLE 12.7
Some Projections of Total Manufacturing Employment in the North East in 1970 and 1975

Basis of projection	Thousands	
	1970	1975
(a) Projection of regional total at 1961-66 growth rate of 0.92% per annum	41.8	43.8
(b) Projection of regional total at 1954-66 growth rate of 1.75% per annum	43.4	47.5
(c) Projection of regional total at rates at which firms completing questionnaire expect to grow	45.1	49.5
(d) (c) above adjusted for bias in response rate	43.7	45.9
(e) Projection of regional total at 0.3% per annum ⁽¹⁾	40.8	41.4
(f) Projection of regional total at 1961-66 national growth rate of 0.18%	40.6	41.0
(g) Projection of regional total at 1954-66 national growth rate of 0.55%	41.2	42.3

⁽¹⁾ This is the expected national growth rate postulated in W. Beckerman's *The British Economy in 1975* (Cambridge, 1968).

easily be calculated, but unfortunately a comparable calculation cannot be done for the North East as figures are only available for certain years. However, comparisons of growth rates for a number of identical time periods may yield some pointers. The annual growth rates between various pairs of years, for which regional figures are available, are given in Table 12.8.

TABLE 12.8
*Growth Rates in Manufacturing Employment:
Great Britain and N.E. Scotland
per cent per annum*

Period	Great Britain	North East	Difference
	%	%	%
1961-66	0.18	0.92	+0.74
1964-66	0.55	1.75	+1.20
1963-66	0.24	1.40	+1.16
1961-65	0.15	0.90	+0.75
1964-65	1.30	2.60	+1.30

This table shows that over all the periods examined, Manufacturing employment in the North East increased at a faster rate than in the country as a whole. What is even more interesting is that, apart from the period 1964-66, the differences in the rates of change between the two areas were approximately the same. If it is reasonable to assume that 1964 was a rather odd year, then it seems that Manufacturing employment in the North East has been increasing at around 0.75% per annum faster than in the U.K. as a whole. This suggests one rough basis on which forecasts can be made.

12.28. With these observations in mind the estimates in Table 12.7 can be looked at again. On the arguments put forward, projections (b), (f) and (g) are no longer acceptable. Similarly, projection (a) is suspect. Writing in 1965, W. Beckerman in his book *The British Economy in 1975* postulated a growth rate of 3.5% per annum in Gross Domestic Product, for 1960-75, as a basis for a projected growth rate of 0.3% per annum in Manufacturing employment. In the light of events since 1965 most economists would now regard this target as too high, and the employment estimate would probably be similarly regarded. If, however, we suppose that G.D.P. might grow at an average rate of 2.5% per annum, and that the growth in Manufacturing employment was maintained in the same ratio as postulated by Beckerman, then the resultant figure would be just over 0.2% per annum.⁽¹⁾ If we can further assume that the difference in the growth rates between Great Britain and the North East continues to be about 0.75% per annum for the next few years, then the resultant growth rate for the North East would be 0.96% per annum. Applying this rate

produces forecasts of 41,900 Manufacturing employees in 1970 and 45,900 in 1975. These forecasts are very close to those obtained by projecting the 1961-66 growth rate (see projection (a) in Table 12.7).

12.29. The forecasts of employment growth produced by local firms give a somewhat different result. If we calculate a rate of growth from the forecasts of the firms completing the questionnaire, we obtain a figure of 2.87% per annum for the 1966-70 period, and 2.3% for 1966-75. However, the firms completing the questionnaires were hardly representative since their average annual rate of growth for the period 1960-66 was 1.76%, or 0.84% higher than the region as a whole. If we reduce the responding firms' projected growth rates by 0.84% per annum, this gives a rate of 2.03% for 1966-70, and 1.46% 1966-75; these rates have been used in projection (d) of Table 12.7.

12.30. One should not simply dismiss estimates of this order. It is true that they are based on the expectations of the larger and probably more efficient firms in the region. But these firms can reasonably be expected to increase their share of total Manufacturing employment, and their predictions are in line with the estimates of capital investment (which saw some falling off by 1970). However, when set against their own past experience as well as that of the whole region, the rates of growth expected by responding firms are difficult to justify. The comparison with likely national rates gives added weight to this view since there seems little prospect of a marked acceleration of employment at the national level; and the fact that the respondents were making their projections before the deflationary measures of November 1967, and of 1968, rather clinches the matter. Probably the most sensible view to take is one based on a compromise of the different strands of evidence. Growth for the 1966-70 period may be near the 0.96% per annum suggested in para. 12.28; this would point to an estimate of 41,900 in Manufacturing jobs in 1970. The period 1970-75 may well see some fall in the rate of growth. Responding firms are expecting their annual rate of growth of employment to fall from 2.9% in 1966-70 to 1.9% in the 1970-75 period, and it is possible that the relationship foreseen by the firms between the two periods is more accurate than the absolute levels of the rates. If we adjust the growth rate of 0.96% accordingly, and apply it to the period 1970-75, we arrive at a figure of 43,200 employees in Manufacturing in 1975. This estimate gives what seems to be a quite attainable figure and one close to that obtained by a simple projection of the 1961-66 growth rate (Table 12.7, projection (a)). The figure of 45,900 obtained from projection (d) might perhaps be regarded as a feasible upper limit for 1975.

12.31. This analysis gives some idea of possible future employment using purely global methods of projection. The results may be used as a check on what is probably the most reliable projection—that obtained by considering the prospects for individual groups of industries.

⁽¹⁾ This may, of course, be on the low side since the downward revision of the annual growth figure is largely due to reasons, such as a slower growth of productivity, which will not necessarily have a proportionate effect on the rate of growth of employment.

The results obtained by this method are shown in Table 12.9, and they should be regarded as the best estimates which can be made with the available information. They have been arrived at by a combination of methods, and by comparisons with the experience of other regions over various time periods. A discussion of the main Manufacturing industries, explaining how the final figures have been arrived at, now follows.

II. Individual Industries of the North East

Engineering and Electrical Goods

12.32. The Engineering and electrical goods group contains half a dozen fairly big firms

(such as the entry of new firms) are possible in the next few years. Firms in this group who responded to our questionnaire have experienced faster growth than the whole group within the region: between 1961 and 1966 their employment expanded at 2.6% per annum compared with an average for the group of 0.9%. The corresponding rate for Great Britain was 1.7%. In all cases the growth rate of employment was much higher for females than for males. Respondents are expecting even higher growth rates for the future, equivalent to 6.7% per annum in 1966-70 and 5.0% per annum in 1966-75. Even those sections of these industries which have been declining are expecting a reversal of trend, leading to a gradual increase. Employment for women is expected to continue to grow at a faster rate than for men. However, all other

TABLE 12.9
*Employment in the Manufacturing Sector in the North East 1966,
and Forecasts for 1970 and 1975*
thousands

Industrial order	1966			1970			1975		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Food, drink and tobacco	7.1	6.4	13.5	7.5	6.7	14.2	7.8	6.9	14.7
Chemicals and allied industries	1.0	0.8	1.8	0.9	0.8	1.7	0.9	0.8	1.7
Metal manufacture	0.1	—	0.1	0.1	—	0.1	0.1	—	0.1
Engineering and electrical goods	4.0	0.9	4.9	4.5	1.0	5.5	4.9	1.1	6.0
Shipbuilding and marine engineering	2.7	0.1	2.8	2.5	0.1	2.6	2.3	0.1	2.4
Vehicles	1.0	0.1	1.1	0.9	0.1	1.0	0.9	0.1	1.0
Metal goods n.e.s.	0.4	0.2	0.6	0.5	0.2	0.7	0.5	0.2	0.7
Textiles	1.7	2.7	4.4	1.7	2.5	4.2	1.8	2.5	4.3
Leather, leather goods and fur	—	—	—	—	—	—	—	—	—
Clothing and footwear	—	0.1	0.1	0.1	0.2	0.3	0.1	0.4	0.5
Bricks, pottery, glass, cement, etc.	1.8	0.1	1.9	1.9	0.1	2.0	2.0	0.1	2.1
Timber, furniture, etc.	2.4	0.5	3.0	2.5	0.5	3.0	2.6	0.5	3.1
Paper, printing, publishing	4.1	1.9	6.0	4.2	1.9	6.1	4.2	2.0	6.2
Other manufacturing industries	0.3	0.2	0.4	0.4	0.2	0.6	0.4	0.5	0.7
Total	26.6	13.5	40.1	27.7	13.6	41.3	28.5	14.5	43.0

Source for 1966 data: D.E.P.

(for the area), and a larger number of smaller ones. The great bulk of employment has been in the engineering side rather than in electrical goods (see Table 12.10). Quite a variety of products are made, some of the main ones being derrick cranes, aerial cableways, twist drills, gears and transmissions, electric lamps, and marine radios and direction finders. Some of the large variation in rates of growth in recent years can be explained by the swift build-up of some large incoming firms. This is certainly true of Other electrical appliances and Engineers' small tools and gauges. The decline in Mechanical handling equipment was to a considerable extent also concentrated in one or two firms, as was the rapid increase in Ordnance small arms and other machinery. Forecasting in this sector is unusually difficult because similar factors

evidence suggests that these forecasts are too optimistic. For example, Beckerman, in *The British Economy in 1975*, anticipated a growth rate of 0.7% per annum 1960-75, which is very much slower than that attained in recent years. It does seem quite possible that, barring any major and presently unforeseen decline in a main industry, the growth in this type of employment for men in the North East could well exceed its performance in recent years, but the 1961-66 rate of 5.2% per annum for females must decline. Annual growth rates of around 3% for men and 2.7% for women up to 1970 seem about as much as may be expected; over the whole period 1966-75 a rate of 2.3% per annum for men and women may be near the mark. These are the rates that have been used in our projections.

TABLE 12.10
*Manufacturing in the North East: Employment by Selected
Minimum List Headings*

Minimum list heading	Number: 1966			Average annual increase 1961-66 per cent per annum	
	Males	Females	Total	Males	Females
212. Bread, flour, confectionery	747	481	1,228	-0.3	+1.3
214. Bacon curing, meat and fish products	3,029	4,925	7,954	+7.4	+3.5
216. Fruit and vegetable products	202	534	546	+15.3	+7.6
239. Other drink industries	2,322	409	2,731	+4.6	+4.6
271 & 273. Chemicals, explosives, fireworks and dyes	594	175	769	-1.5	-5.1
531. Agricultural machinery	594	34	628	+2.6	+1.2
535, 342 & 349. Engineers' small tools and gauges, and Ordnance small arms and other machinery	791	147	938	+10.0	+6.5
537. Mechanical handling equipment	690	49	739	-5.7	-8.2
539. Other machinery	1,615	287	1,903	+1.1	+1.1
564 & 569. Radio and other electronic apparatus and Other electrical appliances	149	281	430	-4.4	+14.0
570.1. Shipbuilding and repairing	2,091	90	2,181	-3.5	-2.4
570.2. Marine engineering	639	57	696	-3.0	-1.5
581. Motor vehicle manufacturing	185	15	199	+4.4	-0.2
584 & 585. Locomotive and railway track equipment, and railway carriages, wagons and trains	708	23	726	-0.1	+7.5
599. Metal industries, n.e.c.	379	38	417	+1.8	+2.8
412. Spinning and doubling	454	785	1,239	-0.1	-4.6
414. Woollen and worsted	882	1,185	2,067	+1.2	+2.2
417. Hosiery and other knitted goods	324	605	929	+10.2	-7.3
419. Abrasives and other building materials, n.e.c.	1,644	114	1,758	-0.4	+4.0
471. Timber	1,235	63	1,316	-1.7	-0.8
472. Furniture and upholstery	511	111	622	+1.9	-5.7
475. Wooden containers and baskets	640	242	882	-0.1	+1.5
481. Paper board	2,716	895	3,609	+0.8	-5.3
483. Manufacture of paper and board, n.e.c.	208	504	705	+6.1	-6.2
485. Printing and publishing of newspapers, etc.	672	165	837	+1.3	+1.4
489. Other printing, publishing, bookbinding, etc.	386	286	672	+0.6	-2.0

Source: D.E.P.

Textiles

12.33. The Textile industry in the North East is composed for the most part of a number of small and medium-sized firms. The main products are flax canvas, synthetic yarns, woollen piece goods (mainly for overcoats and suits) and knitwear of various types. The Woollen and worsted section is much the largest employer and has seen significant increases in employment in recent years, particularly among women. The next largest section, Spinning and doubling, has shown a noticeable decline in employment, especially among women. In Hosiery and other knitted goods employment has expanded rapidly for men and contracted sharply for women. For the whole Textile group during 1961-66 employment has expanded at 1.2% per annum for men and contracted at 3.3% per annum for women. The overall result has been a fall in total employment but at a rate, 1.8% per annum, slightly less than the national rate, and with the unusual distinction of showing an increase in male employment. The respondents to our questionnaire in all the Textile trades recorded an increase in male employment of 0.6% per annum and a contraction in female employment of 2.7% per annum during 1961-66. They anticipate similar increases in male employment to 1975, and a continuing fall in female jobs, but at a much reduced rate. As women make up by far the greater proportion of total employees in the

industry, the overall forecast is a decrease in employment, but at a reduced rate (0.6% per annum 1966-70, and 0.2% per annum 1966-75). On the whole we are doubtful if the increase in male employment will continue in future at the same rate as hitherto and we expect total employment to be slightly lower in 1975 than in 1966.

Paper, Printing and Publishing

12.34. This group is composed of a small number of paper-making firms, an equally small number of publishers (including newspapers) and a larger number of printing firms. The paper-making firms are of course the biggest employers in the sector; their main products include both coated and uncoated papers (the former comprising a large proportion of output) for magazines, books, brochures and catalogues, and a wide variety of specialist items such as duplicating papers, cheque papers, chart and map papers and stationery and envelopes. One firm specialises in the production of paper board. Employment in paper manufacturing has shown only a negligible total increase over the 1961-66 period, but there have been sizeable increases in male employment counterbalanced by a fall in women's jobs. Local firms have recently been investing large sums (around £9 millions in the last few years), most of it in new plant and equip-

ment; but little new employment is projected by the industry in the period up to 1975, most firms expecting to maintain an approximately constant labour force. In the printing and publishing section, a marginal increase in total employment over the 1961-66 period was recorded, increases in male employment again being partially offset by fewer female jobs. The firms in this group who responded to our questionnaire showed a decline in total employment of 0.2% per annum in the 1961-66 period, compared with an annual increase of 0.3% for the whole group in the region. Nationally, employment in this group grew at 0.9% per annum. Our respondents forecast a growth of 0.5% per annum for 1966-70 and 0.3% per annum for 1966-75, and the evidence suggests that these forecasts are quite realistic. Beckerman, for example, forecasts a national growth rate of 0.8% per annum for 1960-75, and it seems unlikely that the North East would have a rate comparable with the national average, especially on the printing side. We have therefore used the rates suggested by the responding firms to obtain our projections in this group of industries.

Food, Drink and Tobacco

12.35. Food processing, including fish processing, is discussed in Chapters 9 and 10, and here comments, as distinct from forecasts, will be restricted to the drink industries. In the North East the main drink manufacture is whisky distilling: this comprises most of the item Other drink industries in Table 12.10. Employment for both men and women has expanded at a fast pace in this industry in the 1961-66 period. At the moment some sections of the whisky industry are suffering from over-capacity, but the problem has so far been confined to the grain distilleries, while it is overwhelmingly malt whiskies that are produced in the North East. Demand for these is increasing and production should continue to increase. Responding firms are not anticipating much increase in employment over the next few years, however, and, unless new distilleries are opened (as has happened recently) employment increases will be fairly modest. Other sections in the Food, drink and tobacco group, especially Bacon curing, meat and fish products and Fruit and vegetable products have experienced very high growth rates in the past few years. In fact, during 1961-66, the whole group grew at 3.8% per annum compared with a national average of 0.2%. Our respondents actually grew at 5.8% per annum in 1960-66; they anticipate a growth rate of 4.6% per annum in 1966-70 and 3.7% per annum over the whole period 1966-75. In the region this group of industries has certainly been behaving very differently from national trends and shows no sign of changing. It is naturally difficult to make forecasts for such a diverse group of industries, but rates of 1.5% per annum for men and 1% per annum for women for 1966-70, with annual increases of 1% and 0.8% for 1966-75, seem attainable and these we have assumed.

Shipbuilding and Marine Engineering

12.36. The Shipbuilding and marine engineering group consists of two largish firms and a number of rather small ones. Much of the output consists of fishing vessels, but the large firms produce general cargo vessels and small tankers. The prosperity of the whole group is dependent to a great extent on the fortunes of the fishing industry. During the 1961-66 period there has been a fairly substantial decline in employment: 2.6% per annum compared with a national figure of 3.8% per annum. And forecasting here is a hazardous business. The local shipbuilding firms could not easily join one or other of the groups formed on the recommendations of the Geddes Report, because of their remote location, and the region will therefore not share in the advantages of these mergers. Beckerman, in line with general opinion, anticipates a decline in employment in the industry as a whole up to 1975, and it is likely that such a decline will proceed at a faster rate in North-East Scotland. On these grounds, we anticipate a fall in employment to 2,600 in 1970 and 2,400 in 1976; and as the industry is largely an employer of men we have concentrated the job losses in male employment. Clearly, however, the decline could be greater, depending on conditions in the fishing industry.

Vehicles

12.37. Numerically, this group consists mainly of rather small specialised firms manufacturing tractor cabs and bodies for lorries; but the bulk of the employment is in the British Rail workshops at Inverurie, making and repairing 'locomotive and railway track equipment' and 'railways carriages, wagons and trains'. Rail and coach work is presently being done at Inverurie for the whole of the Scottish region, and employment has remained virtually static in the 1961-66 period. Much uncertainty surrounds the future of the workshops. For present purposes it has been assumed that the workshops will remain open, and that employment levels will decline slowly from the 1966 level (although as we go to press a more pessimistic outlook has set in). In the smaller vehicle manufacturing sector, employment has increased at a rate of 4.0% in the 1961-66 period. Respondents to our questionnaire experienced a much higher growth rate (over 6.0% per annum) and are expecting even faster rates in the future (over 7.0% per annum 1966-75). This section may well expand fairly briskly, possibly at around 4% per annum, the great bulk of the jobs being for men. The whole group may therefore continue to employ about 1,000 people till 1975. But closure of the British Rail workshops would eliminate 600 jobs, many of them highly skilled; the consequences for Inverurie would be disastrous, and for the region as a whole it would be very serious to lose such a large group of skilled workers.

Chemicals

12.38. The Chemicals group in the North East consists of a few small and medium-sized firms. The main products are fertilisers and super-

phosphates, but floor polish, lubricating oils and greases, and specialised products for the paper-making industry are also produced. Employment in this group declined marginally in the 1961-66 period. Responding firms, who actually suffered some substantial declines, are anticipating no change in employment up to 1970 and very small increases thereafter. Nationally, employment in the Chemical industries also declined during 1961-66 and Beckerman's forecast growth at 1.7% per annum during 1960-75 is unlikely to be attained. Considering the structure of the Chemical industries in the North East a slight decline in employment may well continue until 1970, with a levelling out thereafter.

Timber, Furniture, etc.

12.39. The Timber industries most closely associated with forestry are discussed elsewhere,⁽¹⁾ and here it is sufficient to note that employment in this group, mostly of men, has fallen at the rate of 1.0% per annum over the 1961-66 period. The Timber industry as such is the biggest employer in the group; the Furniture and upholstery section in the North East covers most branches of these particular trades, but the firms are mostly very small. Employment in these trades increased marginally in 1961-66, a useful increase in male jobs more than offsetting a substantial fall in women's jobs. The Wooden containers and baskets section (mostly fish boxes) experienced a small increase in employment, all of it for women. Respondents to the questionnaire are actually expecting a brisk increase in employment in the next few years, but for the whole group very small net increases seem to be all that may be expected. The experience of different sections may well continue to vary as in the past (see Table 12.10).

Bricks, Pottery, Glass, Cement, etc.

12.40. Employment in this heterogeneous group is mainly concentrated in firms producing concrete products, such as paving slabs and blocks, and bricks, and in those engaged in the processing of granite. There was a marginal increase in employment during the 1961-66 period. Responding firms anticipate increases in their labour requirements at the rate of 2.4% per annum in 1966-70 and 2.5% per annum in 1966-75; and these contrast sharply with Beckerman's forecast of a decline, at 0.5% per annum, over the whole period 1960-75. The granite industry of the North East may see some increase in employment with the introduction of cost-reducing techniques on the production side, and some benefits from this may filter through to the granite-processing firms. But these firms are small employers compared with the concrete producers who are also the more optimistic about future employment prospects. In line with past experience, they forecast a higher growth for female than for male employment. Rates of growth of 1% per annum for men and women would seem to be attainable,

and these we have used in arriving at our projections.

Metals

12.41. The group of trades which are included in Metal manufactures is very small in the North East. It is mainly engaged in producing iron castings and certain non-ferrous castings. Employment has declined considerably since 1961, and is now around 100, nearly all men. But firms appear to be optimistic and slight increases in employment may occur up to 1975. The same may be said of what is, in the North East, a more important group: Metal goods not elsewhere specified. This heterogeneous group comprises firms making cans and metal boxes and a number of miscellaneous items such as springs, hollow-ware and 'metal smallwares'. Employment in the region has remained virtually static for the 1961-66 period, but there may be small increases in the period to 1975.

Clothing and Footwear

12.42. In the past this group has not been at all strongly represented in the North East, but in November 1966 one large firm opened a branch factory to make men's suits and outerwear, and employment has expanded quickly, especially for women. In September 1968 it was announced that a manufacturer of children's clothing had decided to take a vacant advance factory at Aberdeen; again it is expected that the employment created will be mainly for women. With these developments in view, it is possible that the sector will employ 200 women and 70 men by 1970, and 400 women and 100 men by 1975.

Other Manufacturing Industries

12.43. In the North East the group of 'Other manufacturing industries' mostly comprises firms making rubber products, toys and sports equipment, and engaged in 'plastics moulding and fabricating'. The production of combs, a traditional industry of Aberdeen, is included here. Employment in the sector is small but has expanded during 1961-66, particularly on the plastics side. Employment may grow to around 400 men and 300 women by 1975.

III. Locational Problems and Future Policy

12.44. It is now time to consider the future role of Manufacturing in the North East. Forecasts have been made of the likely development of the sector, but this should be seen in the perspective of the whole regional economy. From the analysis of other chapters of this Report it is clear that on present trends the expanding sectors of the region will not absorb all the labour being shed from the declining sectors, and that as a consequence outward migration will continue. One of the major conclusions of the survey is that if employment is to expand at a faster rate than now forecast, it is the Manu-

⁽¹⁾ Above, Chapter 11.

facturing sector that must produce the greater part of the necessary growth. On present evidence it can only do so if there is an influx of new industry into the region. It is in this context that an examination of some of the locational problems of the North East is useful, to throw some light on the types of industry best suited for development in the region.

12.45. In the questionnaire to Manufacturing firms in the region respondents were asked to rank the main difficulties which they met in operating in the region. Table 12.11 shows the percentage of firms designating each particular difficulty as the most important for them.

TABLE 12.11
Greatest Difficulty in Operating in the North East

Difficulty	% of firms
Transport services (to and from the North East)	14.6
Communications (incl. personnel movement)	5.2
Availability of ancillary services and trades	2.6
Availability of site services (water, drainage, etc.)	1.9
Housing for key workers	10.4
Housing for other wage earners	9.5
Housing for staff and managerial grades	2.6
Local authority co-operation	2.6
Local technical educational facilities	5.2
Availability of land on site	2.6
Availability of finance for current operations or expansion	12.2
Other difficulties (miscellaneous)	15.6
No difficulties	22.6

Source: Manufacturing Enquiry.

As this table shows, the most frequently noted difficulty was transport services. Generally, this meant the cost of these services, but sometimes firms have complained about their quality as well. For example, one large firm has expressed dissatisfaction with the poor co-ordination between the liner train services and the connecting road transport. On the other hand firms often express satisfaction with the quality of these services. The usefulness of the direct air service with London was frequently noted. One suggestion to alleviate the transport cost problem is that the Regional Employment Premium might be extended to the road-haulage industry operating in the North East (and thus probably to all Development Areas). This would help to offset the extra transport cost burden arising from the increase in road licences announced in the March, 1968 Budget, and the further burden imposed by the Transport Act of that year.

12.46. The provision of housing for workers was also seen as an important problem by local firms. It was not peculiar to any one area in the region, and occurred in localities of both large and sparse populations. Firms generally agreed that the policies of local authorities did include the provision of houses for key workers, and certainly all the local authorities with whom members of the team have discussed this matter expressed themselves as entirely sympathetic to such applications. Many firms said that local

authorities had been very helpful on occasions, but that there was no guarantee that houses would be available and often the authority could not provide one. There was a distinct feeling that local authorities were more co-operative if the job was a newly-created one and if it was being filled by someone from outside the region. It was also felt that new incoming firms were treated sympathetically. However, from the point of view of industrial development, 'replacement' jobs may be of equal importance to new ones, and it is in principle desirable that houses should be allocated to key workers from the North East on an equal basis with outsiders, since this may often ensure that a local worker does not leave the area altogether. But it is recognised that this may present practical difficulties.

12.47. Another problem which received comparatively frequent mention was the availability of finance for current operations and expansion. A number of firms experienced difficulty in obtaining as much credit as they would like from the banks. This problem has of course been particularly marked in the last two or three years because of credit squeezes and ceilings on bank lending, and is by no means peculiar to the North East. But firms in this region tend to be small and it is possible that small firms have greater difficulty in obtaining credit at times of restriction than larger firms. The North East of Scotland has generally not been suffering from inflationary pressures, and there is an argument for some discrimination between regions in the application of restrictions on bank lending. This already exists to a certain extent in that the special deposits of the Scottish banks at the Bank of England are only at one-half the rate of those required from the English banks. Attempts to introduce a more thoroughgoing regional differentiation in bank lending would encounter a number of practical problems and would depend very much on the goodwill and co-operation of the banks. There is a case, however, for giving the matter further consideration and for the authorities exploring with the banks the question of whether some softening of the impact of credit restrictions in particular areas is possible.

12.48. As many as 22.6% of responding firms thought that they incurred no special difficulties in operating in the North East, and it should also be stressed at this stage that our analysis takes no account of any special locational advantages which the area may have, and which may more than compensate for the drawbacks noted by firms. Firms which were interviewed were asked to comment on the usefulness of the various Government financial regional incentives. They were broadly happy with these. In important cases the investment incentives had been one of the factors determining the decisions of new firms to come into the area. In other cases these incentives had meant that significant expansion could take place which otherwise would not have occurred. The Regional Employment Premium was important to some firms, but several others felt that they could not rely on its permanence. The attractiveness of the

two types of assistance naturally varied according to whether the firm was of the labour or capital-intensive type.

12.49. A more comprehensive impression of the difficulties asked about in the questionnaire may be obtained from a weighted index. This has been constructed by adding the number of 'mentions' of each difficulty, but counting it as 3 when it appears in first place, as 2 when in second, and as 1 when in third place. The result is shown in Table 12.12.

TABLE 12.12
Weighted Index of Difficulties of Operating in the North East

Difficulty	Weighted no. of mentions
Transport services	78
Housing for key workers	68
Availability of finance for current operations or expansion	54
Housing for other wage earners	44
Local technical educational facilities	34
Communications	29
Availability of ancillary services	24
Availability of land on site	20
Housing for staff and managerial grades	15
Local authority co-operation	15
Availability of site services	15

Source: Manufacturing Enquiry.

Even after extending the analysis to include three difficulties, the major ones discussed above still predominate. It is again interesting to see the extent to which firms find no locational difficulties. In fact 40% of firms noted only one locational disadvantage and 53% noted two. It might well be thought that operating difficulties would vary greatly from industry to industry. It was found, however, that there were no significant relationships between difficulties and Industrial Orders. Furthermore, there was little agreement among firms in the same type of business as to the ranking of their main difficulties. Again, location within the region did not make any noticeable difference in the ranking of difficulties. The explanation for this surprising diversity of experience among firms producing apparently similar products may lie in differences in raw materials, labour needs, finance, and even—in detail—the products themselves. Alternatively, one could deduce that there are no difficulties affecting firms within the region which cannot be overcome, or considerably lessened, by some kind of action.

12.50. It is difficult to identify which Manufacturing industries are best suited for development in the North East other than in general terms, as feasibility studies in depth could not be attempted. Firms which have recently established themselves in the region were interviewed to see what lessons could be learned. Broadly speaking, these newer firms have been in industries where transport costs are a low proportion of total costs. Often they have not belonged to industries already well-established in the region, and this does not seem to have greatly hampered

their progress. Indeed in some cases it may have operated to their advantage as they would otherwise have had to compete strongly for particular classes of labour. Their experience has certainly shown that the North East can provide a supply of very adaptable and highly trainable labour, both male and female.

12.51. As a general proposition it is useful to look for industries complementary to existing activities. Opportunities of this kind in the timber and food-processing industries are discussed elsewhere. Here we should notice recent developments in the clothing industry in the North East. Until recently this industry was barely represented in the region; but there is reason to think that the recent growth in men's tailoring could be repeated in other branches of the clothing industry, and the recent announcement that an incoming firm is to produce children's wear at Aberdeen may portend further developments in this line. The local availability of raw materials and a suitable labour force offer definite possibilities for such development, and while such industry is mainly an employer of women, it could provide a useful addition in some parts of the regional economy.

12.52. However it is to the broad Engineering and electrical goods group that the North East should probably look for the bulk of new development. Firms in this sector are frequently heavy employers of men, and it is jobs for men that are crucial for the retention of population within the region. The first advantage of the area to the engineering industry is that it already possesses a considerable labour force with skills applicable to that industry. This point has for long been recognised by national firms who come to the region to recruit skilled workers. An incoming engineering firm, particularly to Aberdeen, will be able to find labour accustomed to its type of work, or which can be very quickly adapted to it. The existence of a fairly diversified engineering industry in the region (again in the Aberdeen area) might also mean that components or other materials are either available or could be manufactured relatively quickly by indigenous firms.

12.53. The electrical manufacturing industry does not have such a strong base in the region, but there seems to be no major reason why it could not be profitably extended. One significant point here concerns staff. Most branches of the electrical manufacturing sector require a number of highly qualified staff, with university or equivalent training. The supply of such people would present no difficulties since many are produced by the educational institutions of the area and almost all have to leave it to find employment. For example, the opportunities for engineering graduates—particularly electrical engineers—to work in the region are limited. More specifically it seems that research and development activities in this industry might well be successfully carried on in the North East. In this branch of the business, transport costs are unlikely to be important. Fruitful co-operation could be promoted between such units and the corresponding specialists in the higher educational

institutions of Aberdeen—co-operation which at present has rather limited scope.

12.54. The possibilities of co-operation between industry and specialists in the educational and research institutes of the area indicate another potential line of development. The Aberdeen City region has a remarkable concentration of experts in the biological sciences—in the eminent research institutes (the Macaulay, the Rowett, the Torry and the D.A.F.S. Marine Laboratory) and in the University. This could mean that some of the newer, biologically-based industries (e.g. those based on exploiting the properties of enzymes) would find the region a very favourable location, on the research as well as on the production side.

12.55. Finally, there is the possibility that public bodies could come to the region and engage directly in manufacturing. For example if the G.P.O. were to start manufacturing telecommunication equipment it could be asked to give very serious consideration to North-East Scotland. This is a rapidly expanding field which will certainly continue to grow in the future, and it would appear to be very suitable for development in the region.

Summary and Conclusions

12.56. The main points of this analysis of Manufacturing in North-East Scotland may be summarised as follows:

- (i) In terms of total employment the Manufacturing sector in the region is relatively smaller than in Great Britain as a whole, but in recent years it has grown both absolutely and relatively. In doing so it has become rather more concentrated, geographically and industrially.
- (ii) There is a considerable variation in structures between North-East firms. Transport costs are generally more significant in those industries which have been established in the region for some time.
- (iii) Local markets tend to be either of very great or of small importance for North-East Manufacturing firms. For a large proportion of firms markets in England and overseas are more important than Scottish outlets and this is likely to continue.
- (iv) On the basis of an analysis of the growth trends of the sector as a whole and of individual industry groups within it, it is projected that total employment in North-East Manufacturing may increase from some 40,000 in 1966 to around 43,000 in 1975.
- (v) A variety of locational difficulties have been noted by local firms, those receiving most mention being transport services, the availability of housing for key workers and the availability of finance for expansion.
- (vi) Granted that an influx of Manufacturing activities into the North East is necessary to offset decline in other sectors, and to reduce net outward migration, suitable industries for development in the region include engineering and electrical goods and clothing. With its strong base of higher educational and research institutions the area also affords a suitable location for the research and development units of Manufacturing firms, and for science-based industries in the biological field.

The Service Industries

HARRY W. RICHARDSON

I. General Trends and Forecasts for 1975

13.1. This chapter discusses the role of the Service industries in the region's economy and assesses their employment prospects upto 1975. Other aspects—the implications of Service establishments for urban and regional planning and the availability of Services such as public utilities and transport facilities to Manufacturing firms—are dealt with in Chapters 6 and 15 respectively.

13.2. The generalisation, sometimes made, that the economy of North-East Scotland is dominated by Service industries is misleading. It is true that Service industries are rather more heavily represented in the region than in Great Britain or Scotland. But as Table 13.1 makes clear, the difference is hardly great; and it is more accurate to speak in terms of an 'under-representation' of Manufacturing and an 'over-representation' of agriculture and Construction in the region. The distribution of Service employment among individual activities of this very heterogeneous sector does, however, differ markedly from the pattern found in Great

Britain, Scotland or other regions. Thus, Distribution and Professional and scientific services (especially education and medical services) bulk largely in the region's employment structure, and some sub-sectors (such as hotels, garages and domestic service) are also relatively important; but North-East Scotland shows a comparatively low percentage of employment in public utilities, Transport and communications, Insurance, banking and finance and Public administration (especially National Government service). The lesser development of public utilities and transport reflects the small size of the Manufacturing sector in the region. The poor showing in Insurance, banking and finance and in National Government service is primarily due to these being the two main sectors where the distance factor (in the sense of the economic or subjective advantages of nearness to London) militates against the region.

13.3. A significant feature of employment in the Service Industries is the predominance of female labour. Women account for about 51% of Service employment compared with only 37% of the regional labour force as a whole. More-

TABLE 13.1
*Structure of the Labour Force in Service Industries, N.E. Scotland,
Scotland and Great Britain, June 1966*
per cent of employees (including unemployed) in each area

	North East	Scotland	Great Britain
	%	%	%
Total Services	51.9	49.9	50.1
of which:			
Gas, electricity and water	1.3	1.6	1.8
Transport and communications . .	3.8	7.4	6.9
Distributive trades	14.6	13.4	12.8
Insurance, banking and finance . .	1.8	2.1	2.7
Professional and scientific services .	14.7	11.8	10.7
Miscellaneous services	10.3	8.5	9.5
Public administration	3.5	5.3	5.8
further sub-divisions			
Retail distribution	10.7	10.1	9.0
Educational services	7.2	5.3	5.1
Medical and dental services	5.7	4.8	4.0
Catering, hotels, etc.	3.3	3.0	2.6
Motor repairs, garages, etc.	2.3	1.8	1.9
Private domestic service	1.4	0.7	0.8
National Govt. service	0.7	2.0	2.4
Local govt. service	2.8	3.3	3.4

Source: D.E.P.

over, women predominate most in the fastest growing categories, e.g. Professional and scientific services and Miscellaneous services; while the sectors relying most on male labour are either declining (e.g. transport) or are regionally under-represented (e.g. National Government service, Insurance, banking and finance). Expansion in Service employment will be associated with a continued rise in the proportion of women; and although new male jobs will be created on some scale in a few sectors, e.g. Motor repairs and garages, the Service industries as a whole are unlikely to create substantial additional demands for male labour. Thus while expansion in Service sectors can make a valuable contribution to the region's future development, by generating income and by raising activity rates among women, it cannot replace an inflow of Manufacturing as a means of reducing net migration rates.

13.4. The main aim of this chapter is to project employment in the Service industries up to 1975. Various possible methods of doing this offer themselves here. One frequently used in this context is to treat the Service industries as dependent on the rest of the regional economy, and to forecast their growth via a projection of the 'export base'. This method, which we regard as inefficient for projection purposes, is discussed in Appendix E.I. Instead of this, and of various other alternatives,⁽¹⁾ we take the view that, overall, the most acceptable procedure for forecasting the regional demand for labour in the region is industry by industry. This assumes that the aggregate supply of labour will not constrain growth in the region up to 1975, and that the level of employment in that year will be the sum of demands for labour in the individual sectors. The Service industries are such a heterogeneous group that they have to be examined sector by sector rather than as a unified whole. The main source of forecasts made in this chapter is information directly supplied by local Service establishments modified in the light of knowledge about the future of the Service industries nationally and expectations of growth potential in the region. For a few small Service sectors fairly crude extrapolation techniques had to be used to estimate labour requirements.

13.5. Since change in the Service trades is to a large degree the result of changes in population and income, the adoption of direct methods of inquiry has not enabled us to avoid making certain general assumptions. We have assumed that Gross National Product will grow in the period 1966-75 at some average rate within the range 2½-3% per annum. We have also assumed that though the population of the region may well be less in 1975 than in 1966, the impact of this decline on the demand for services will not have a serious effect on employment growth. However, we have not ignored the possibility that changes in the age structure of the population may affect Service employment (e.g. in education and medical services) nor that changes in the geographical distribution of population may have some influence. For the purpose of projection we further assume that there will be no massive inflow of new Manufacturing firms

before 1975 on such a scale as to generate much higher levels of Service activity.

13.6. The employment breakdown by S.I.C. main headings for 1966 and the projections for 1975 are presented in Table 13.2.⁽²⁾ The estimates of rates of change in employment by sectors for the period 1961-66 have to be treated with caution. Reclassification in 1963 led to large numbers being transferred from local authority employment to education, medical services and Construction. Thus the decline in local authority employment was apparent and not real, and rates of change in other sectors are inflated. For some sectors alternative projections have been made for 1975; the basis for these is described in sections dealing with individual industries later in this chapter. Projection a combines all the higher estimates, while Projection b takes in the lower ones. In most cases, for reasons given in the individual sections, the lower estimates are preferred. The method adopted for making forecasts has required us to build up our estimates from minimum list headings. For this reason we have had to use employment data obtained by an aggregation of statistics from the individual employment exchange areas of the region. These are not comprehensive, for they exclude people whose work-place within Scotland is not known. The Service industries are particularly affected by this 'unlocated' portion, and estimates to take account of these have been prepared for the Scottish Planning Regions by the D.E.P. These estimates are given for 1966 and 1967 in the final columns of Table 13.2, and the 1966 figures have been projected forward to 1975 on the same basis as the lower of our more detailed estimates. The choice of the lower of our two projections receives some support from the 1967 data. The latter show marked declines in Service employment, particularly in Distribution and the Miscellaneous services category. It would be dangerous, however, to infer a trend from a single year's change: the year 1966-1967 was not only a period of recession, but also the first year of operation of S.E.T.

13.7. Since 1966 Census information was not available in time, we have ignored the large numbers of self-employed in Service trades. In any event, the information is scanty and estimates of self-employed have to be obtained by comparing D.E.P. statistics with the Census occupational returns. In 1961 there may have been about 4,700 self-employed (virtually all

⁽¹⁾ For example, one possibility is to assume a national growth rate in G.N.P., to disaggregate it according to the intersectoral relations described by the Cambridge or National Institute models, and then to modify the assumed national growth rates for industrial sectors to yield regional growth rates, with the aid of locally received information. The main drawback to this approach is that to convert rates of output into employment growth we require a basis for estimating regional productivity rates, and these may vary most widely between regions than rates of output.

⁽²⁾ If we attempt to measure Service employment by types of occupation (e.g. treating clerks in Manufacturing firms as Service workers) rather than by industrial groups, we obtain a rather higher estimate. The 1966 Census returns are summarised in Appendix Table E.7.

TABLE 13.2

Employment in the Service Sub-Sectors in North-East Scotland, 1956 and 1975

1	2			3	4	5	6	7					8					
	Employment, June 1956 thousands							Females as proportion of labour force	Unemploy- ment rates, June 1956	Annual rates of change in employment 1951-55 per cent	Projected annual rates of change in employment 1956-75, alternative estimates per cent	Projections based on detailed, alternative estimates thousands			Employment in 1975:			Extrapolations of adjusted D.E.P. total employment figures ^(b) thousands
	M	F	T									Males a.	b.	1966	1967	1975	Totals c.	
Gas, electricity and water	1.7	0.2	2.0	11.4	1.2	+1.9	+0.9		1.9	0.2	2.1	2.0	1.9	2.2				
Transport and communications	7.6	1.4	9.0	15.3	4.0	-2.4	-1.0		7.0	1.1	8.1	9.1	8.8	8.3				
Distributive trades	10.7	11.6	22.3	51.9	9.0	-0.5	-0.4	-0.9	10.0	10.0	21.5	24.3	23.5 ^(a)	22.2				
Insurance, banking and finance	1.6	1.1	2.7	41.9	2.7	-0.7	+1.1		1.6	1.4	3.0	2.8	2.8	3.1				
Professional and scientific services	6.8	13.7	20.5	69.7	0.4	+3.8	+1.8	+1.5	8.1	18.4	26.5	23.2	23.6	26.5				
Miscellaneous services	6.5	9.2	15.7	58.5	2.1	+1.4	+0.7	+0.3	7.5	9.3	16.8	16.1	15.1 ^(a)	16.6				
Public administration	4.0	1.4	5.4	25.3	3.2	-3.4	+1.1	+0.7	4.4	1.6	6.0	5.7	6.0	6.1				
Total Services	38.9	40.6	79.5	51.0	1.9	+0.5	+0.6	+0.3	40.5	43.5	84.0	83.3	80.8	85.2				

(a) The basis of these projections is indicated in paragraph 13.6.

(b) Figures for 1956-67 are D.E.P. estimates for the North East Tyneside Region, with the adjustments noted in 3 below. The 1975 figures are projections of the 1966 figures at the lower of the projected rates of change in column 6.

(c) The estimates for Distribution and Miscellaneous services have been raised by 480 and 100 respectively to take account of reclassification of workers. The total has also been readjusted.

males) in Distribution, 4,500 in Miscellaneous services (more than half of whom are females) and 2,500 in Transport (mainly males), with smaller numbers in other services. These numbers have fallen since 1961, and we expect them to fall in the future. The decline in self-employment may offset much of our lower estimate of additional jobs in Service employment.

13.8. The expected pattern of Service employment between 1966 and 1975 is clear from Table 13.2: at best, there will be an increase of about 4,500 jobs, while if the lower projections prevail, this could be as low as 1,800 jobs. Although there will be an increase in both male and female employment, the bulk of the increased demand will be for female labour. The increase in male jobs may be less than 400 or as high as 1,600. This anticipated growth will be compounded of expansion in some sectors and decline in others. The two main sectors expected to shed labour over the next few years are Transport and the Distributive trades. We estimate that there will be a modest expansion in Insurance, banking and finance, and in Public administration, in both cases an apparent change in trend from recent experience—though, as suggested above, the decline between 1961 and 1966 is probably spurious. As in the recent past, Professional and scientific services will be the most rapidly expanding group because of rising employment in both education and the medical services. However, in all expanding sectors the rate of growth in employment is expected to be slower than in recent years. The overall rate of increase in Service employment, on the other hand, is not expected to diverge much from the past trend.

Automation and Service Employment

13.9. A major imponderable in predicting future changes in Service employment is the effects of automatic data processing, computers and other labour-saving techniques. Even if it could be assumed from spatial diffusion of innovations patterns that A.D.P.'s inroads in Aberdeen would lag behind the rest of Britain (because of the distance factor and the local orientation of most of its Service activities), this does not justify neglecting the problem.

13.10. Automation has different consequences in different Service sectors. Those most likely to be affected include banks, insurance companies, central and local government departments, and large commercial offices. In distribution, productivity advances are rapidly increasing and A.D.P. does have a role, especially in the wholesale trade and in large multiple retail organisations. More widely-diffused labour-saving methods include better materials handling techniques, expansion in self-service and machine-vending, and improved work-scheduling techniques. There are Service sectors that remain virtually unaffected, however, such as those catering for leisure activities. Most investigations suggest that A.D.P. is unlikely to have a substantial adverse effect on employment in offices up to 1975. Such systems take a long time to install, and it has been found that

in any case organisations installing A.D.P. increased their number of office employees on average by 8%. It is predicted that up to 1975 the number of additional office jobs will exceed those abolished by A.D.P.⁽¹⁾ On the other hand, many studies have shown that A.D.P. does lead to impressive savings in staff in the functions that are automated. It is a fact that Britain lags far behind the United States in this development, primarily because of disparity in the ratio of employee salaries to computer rentals. Also the scope for economies in office employment is very great. Nevertheless there seems little cause for dissenting from the view that A.D.P. will not in the short-run reduce office employment in the U.K. Moreover, the rate of application in North-East Scotland is likely to fall below the national average, and it will not therefore have much impact on employment in the region until after 1975.

The Effects of S.E.T. and R.E.P.

13.11. The importance of Service industries in the region's economy combined with the small Manufacturing sector suggest that the effects of S.E.T. may be more deflationary in North-East Scotland than elsewhere. On the other hand, this would not necessarily be serious if, as a consequence of the tax and R.E.P., redeployment was taking place out of Service industries into high-income Manufacturing. The evidence on redeployment as a result of S.E.T. is unclear. Respondents to the Distribution survey state that there have been few dismissals, though in some cases natural wastage is not being made up. Instead, firms are either absorbing the tax or passing it on to consumers (or both). However, the D.E.P. Planning Region employment estimates for 1967 show marked declines in the region's labour force in Distribution, Miscellaneous services and Construction, sectors which are particularly vulnerable to S.E.T. Moreover, the increase in the rate of tax from September 1968 may have the long-run effect of accelerating any shake-out. But employment opportunities in Manufacturing are rising too slowly, and it is likely that Regional plus the Selective Employment Premiums will lead to the creation of too few new Manufacturing jobs in the North East. Thus, to the extent that redeployment objectives are realised in North-East Scotland, S.E.T. will tend to redeploy labour into Manufacturing outside the region, and thus accelerate out-migration—a result which clearly conflicts with any plans for developing the region.

13.12. Although the net yield per capita from S.E.T. (excluding R.E.P.) is somewhat higher for the region than for the U.K. as a whole, the argument that particular exemptions from S.E.T. in some areas but not in others would complicate the administration of the tax is compelling. Moreover, there is evidence that productivity is low in some Service industries in North-East Scotland. For example, looking at efficiency in retail distribution, one study based

⁽¹⁾ U.K. Manpower Research Unit: 4th Report, *Conclusions in Q&A* (December, 1965).

on the 1961 Census of Distribution put Aberdeen in the thirty-second place out of 34 towns and cities of its size-class.⁽¹⁾ For these reasons, it is not sensible to argue that amendments should be made to S.E.T. outside the context of national decisions regarding the tax.

The Service Sector after 1975

13.13. Our forecasts of Service employment in 1975 are subject to the reliability of judgments on the influence of extraneous variables. The demand for labour in so many key sectors in the Service field depends directly on Government policy and national investment constraints. This is particularly the case with education, medical services and public administration; while future employment changes in public utilities and transport are also substantially affected by public investment decisions. When we look beyond 1975 the imponderables become so great as to make specific projections impossible. Nevertheless, there is little reason to doubt the long-run viability of the Service industries in North-East Scotland. As incomes increase, the demand for education, for improved medical services and for many personal services will continue to expand. Although there is substantial scope for extensive productivity improvements in many Service sectors, there are others (particularly those quoted above) where labour requirements will continue to increase. And while by 1980 automation should be going ahead rapidly, in many fields this will be counterbalanced by increased employment opportunities in sectors less amenable to such developments.

II. Individual Sectors

Distribution

13.14. The Distributive trades sector is one of the largest sources of employment in North-East Scotland, employing more than one-seventh of the total labour force. It consists of four main activities: Wholesale distribution, Retail distribution, Dealing in coal, building materials, grain and (especially in this area) agricultural supplies and Dealing in other industrial materials. Although female labour predominates in

the retail section, this is matched by a predominance of male labour in other branches, so that about 48% of the labour force are males. However, retail trade is easily the most important part of Distribution, accounting in 1966 for 74% of total employment. Another feature is the very high concentration of the Distributive trades in Aberdeen and district (see Tables 13.3 and 13.4).

13.15. We have no reliable estimates of retail sales for the period after the 1961 Census of Distribution. Our own Retail distribution questionnaire yielded some information, but its coverage was not comprehensive.⁽²⁾ An alternative approach is to measure the growth in retail sales indirectly from estimates of the growth in population and in disposable income. Here too we encounter great difficulties. Forecasts of population growth are handicapped by the fact that net migration from this region is a variable which may fluctuate widely. However, the probable decline in the population of the region as a whole in the next decade may be offset by some increase in Aberdeen City, and in the suburban areas within the 15 mile radius 'cut

TABLE 13.3
*Employees (including Unemployed) in
Distribution in N.E. Scotland, 1961-66*
thousands

	1961	1966
Wholesale distribution . . .	3.47	3.31
Retail distribution . . .	16.79	16.65
Dealing in coal, building materials etc.	2.00	1.86
Dealing in other industrial materials	0.96	0.92
Total	23.22	22.74

Source: D.E.P.

(1) K. D. George, *Productivity in Distribution* (1966), University of Cambridge Department of Applied Economics Occasional Paper No. 8.

(2) The response to the Enquiry was in excess of 35% of the firms circulated. Since the latter were only a sample of the total distribution outlets it is comforting to note that the respondents covered 20% of total regional employment in Retail distribution.

TABLE 13.4
*Employment in Distribution, N.E. Scotland and
Aberdeen Exchange Area, 1966*
thousands

	N.E. Scotland			Aberdeen Exchange Area		
	Male	Female	Total	Male	Female	Total
Wholesale distribution . . .	1.49	1.33	3.23	1.37	0.94	2.31
Retail distribution . . .	6.73	9.45	16.38	4.25	6.41	10.66
Dealing in coal etc. . .	1.40	0.60	1.80	1.02	0.53	1.35
Dealing in industrial materials	0.70	0.18	0.88	0.40	0.14	0.54
Total	10.72	11.56	22.29	7.04	7.82	14.63

Source: D.E.P.

off for shopping trips often assumed in shopping-potential studies. Population influences may have negligible repercussions on the growth rate of retail sales in the region as a whole, though they could have a marked effect on the intra-regional distribution of retail sales.

TABLE 13.5
*North East: Some Results of the
Distribution Enquiry*

	%
Change in male employment, 1961-67 . . .	-14
Change in female employment, 1961-67 . . .	+11
Change in total employment, 1961-65 . . .	+2
Forecast change in employment, 1967-75 (smaller sample)	-8
Change in retail sales, 1961-65	+19

Source: Distribution Enquiry.

13.16. The influence of rising incomes is even more difficult to quantify. Disposable income will probably increase at a slightly slower rate than GNP over the next few years, and consumers' expenditure may rise somewhat more slowly than disposable income. What is more certain is that retail sales will grow less than consumers' expenditure, due to faster expansion in mail order sales, automatic vending, direct selling and spending on Services. If we assume that GNP will increase at an annual average rate of 2.4-3% during 1966-75, then this sets a ceiling on the rate of expansion in retail sales. The rate of increase in retail sales in North-East Scotland will fall much below this ceiling, partly for the above reasons, partly because disposable income in the region will probably expand at rather less than the national rate up to 1975. But there are marked regional variations in consumption habits which might affect the pattern and level of retail spending. Retail sales in the U.K. as a whole increased by 25% at current prices between 1961 and 1966, but about two-thirds of the rise was due to increased prices. Turnover among the respondents to our Retail Distribution Enquiry increased much more slowly by 13.3% only at current prices, 1961-66, implying a slight decline in real turnover. However, the projections of the respondents up to 1975 were somewhat more optimistic. Admittedly, they are unaccustomed to making long-term sales forecasts, but we do not expect the recent stagnation to continue. Taking into account all the available evidence both national and regional, we estimate that an annual average rate of growth in real turnover of 1.5%, between 1966 and 1975, is the maximum likely to be attained.

13.17. Deriving the implications for employment of a forecast growth in retail sales is no easy task because productivity changes are notoriously difficult to predict in this sector. However, past trends in Distribution suggest that an annual rate of growth in retail sales of 1½% could easily be accommodated without any

expansion in the labour force. Thus, there is unlikely to be any expansion in employment in Retail distribution up to 1975. Indeed, there are possibilities of a decline in the region.

13.18. There are several reasons for this belief. Although sales per shop were considerably higher in Aberdeen than in other Scottish cities, sales per person engaged were very low according to the 1961 Census. There was thus considerable scope for productivity improvements. In part, this reflects a general lag throughout Scotland, behind the rest of the United Kingdom, in supermarket developments, the introduction of self-service and other labour-saving methods. The increase in S.E.T. rates should accelerate labour economies. We have also to take into account the Enquiry respondents' prediction of a fall in employment up to 1975 (see Table 13.5).⁽¹⁾

13.19. The most complex factor affecting the efficiency of Retail distribution is the change in structure between more and less efficient retail outlets. In Aberdeen, about three-quarters of full-time employees in the non-food sections of retail trade are in the central shopping area. If shopping trends favour the central area this will tend to raise productivity by shifting sales towards shops with a higher turnover and higher sales per employee. Similarly, the changing population distribution within the region, away from the rural areas towards the City region and within Aberdeen's regional drawing power, will have the same effect. However, there are offsetting influences which may favour an expansion of sales in suburban areas and off-centre locations; these include car-parking restrictions (about three-quarters of the Enquiry respondents said that this was affecting their sales), and rising rents and rates. One or two large multiple establishments may come into Aberdeen before 1975, but these will add little to employment as their growth will be largely at the expense of other retail establishments. Finally, even changes in the pattern of retail spending can affect productivity, since sales per employee vary considerably from one type of business to another.

13.20. The net effect of all these variables will probably be a faster increase in productivity in North-East Scotland than experienced in the recent past. This should be more than enough to absorb the forecast rise in retail sales. In Table 13.6 we present two alternative estimates: *A* based on an extrapolation of past experience, and *B* related to the projection made from the survey. We have also assumed that the recent trend towards a higher female share in the labour force will continue. Turnover in the Wholesale distributive sector is highly dependent on the trend in retail sales. Although there have been a few new wholesale establishments in recent years, these are unlikely to have much impact

(1) However, this projection has to be interpreted with caution, partly because less than half the respondents were willing to make forecasts so far ahead. Moreover, the Northern Co-operative Society, a large employer not making a forecast for 1975, will open a large new store in 1970 and this will require substantial additions to its labour force.

on employment. The scope for labour-saving improvements in wholesaling is at least as great as in the retail trade. Moreover, the wholesale trade is suffering as a result of continuing shifts in the distribution of sales to multiples, supermarkets and other nationally based firms which by-pass wholesalers. Employment in wholesaling will probably decline at least as rapidly as in the past. Similar trends are likely in the other distributive categories. The consequences for the Distributive trades as a whole are shown in Table 13.6.

TABLE 13.6

Forecasts of Employment in Distribution, 1975
thousands

	Retail distribution		Total Distributive trades	
	A	B	A	B
Males	6.35	5.90	10.05	9.60
Females	9.75	9.10	11.45	10.80
Total	16.10	15.00	21.50	20.40

Medical Services and Education

13.21. Professional and scientific services are heavily represented in North-East Scotland (see Table 13.1). The group is dominated by Educational and Medical services which together accounted for 88% of total employment in the group in 1966,⁽¹⁾ and which have been the most rapidly expanding Service sectors in the region in recent years. In the long-run, rising incomes will be accompanied by demands for improved quantity and quality of both education and health services. North-East Scotland benefits from above-average levels of provision in both sectors (see below); and this suggests that higher demands could be placed on them without a commensurate expansion in facilities.

13.22. However, there is no reason why the quality of service should have to fall since supply constraints are much less severe than in other parts of Britain. Teacher shortage is very slight compared with elsewhere (see Appendix Table E.4), and training facilities in medicine are so extensive that many more medical staff (both doctors and nurses) are trained here than could be absorbed into employment in the region itself.⁽²⁾ Furthermore the pressure on the Construction industry may be less intense than elsewhere so that hospital and school-building programmes would impose less strain on resources than in other regions.

13.23. However, despite the absence of major supply constraints, it would be wrong to assume that these sectors will grow as rapidly as in the past. Both cater almost exclusively for local needs,⁽³⁾ but they are dependent upon the availability of public funds and their growth rates depend to a large extent on Government policy. Given the limited resources available for social service expenditure over the next decade, Government funds may be channelled more towards less favourably endowed regions.

13.24. Both sectors are capable of exploiting substantial economies of scale. In education there is some evidence that costs per pupil fall with increasing school size, while in hospitals Aberdeen is the only centre in the region large enough to maintain a comprehensive service in all the main specialities. In the rural areas improved transport facilities are enabling educational authorities to close down small schools with some concentration in larger schools, while in Aberdeen City secondary schools in obsolete buildings will be replaced by larger comprehensive schools. In hospitals the long-run objective is to concentrate all the major facilities not only in Aberdeen, but at the Foresterhill site, though supported by peripheral G.P. hospitals, long-stay units and limited surgical facilities near other population centres. Already 34% of the North Eastern Regional Hospital Board's beds and about three-quarters of its expenditure are concentrated in Aberdeen and its suburbs⁽⁴⁾ (see Table 13.8). But there has been no sign of any further increase in concentration in recent years,⁽⁵⁾ and develop-

TABLE 13.7

General Practitioners and Dentists (N.H.S.) in N.E. Scotland

	North-East		Great Britain
	1960	1967	
General practitioners	244	250	2,047 (1962)
Assistants and trainees	31	17	
Patients per G.P.	1,833	1,808	
Patients per G.P. (including assistants)	1,644	1,688	3,660 (1960)
Dentists	81	84	
Assistants	10	15	
Population per dentist (including assistants)	3,004	4,328	

Sources: N.H.S. Executive Council.

(1) The remaining services in the Professional and scientific services group (accountancy, law, religion and other services) account for less than 2,800 employees. Not much expansion is anticipated by 1975, partly because this sector could be affected by S.E.T. Employment in Legal services will probably continue to fall (and in Religious organisations the numbers involved are few), but this should be offset by an increased demand for accountants' services and by employment growth in the Other professional and scientific services group.

(2) For example only 12.9% of the nursing staff are recruited from outside the region. On the other hand, there are shortages in both sectors, e.g. secondary teachers, medical auxiliaries in certain fields and technicians.

(3) The University is an exception to this generalisation, though its local bias is higher than in most British universities.

(4) Data for hospital services refer to the area covered by the N.E.R.H.B., though Orkney and Shetland have been excluded. We have no data referring to Na h-eileanan which though inside the survey area, comes under the Northern R.H.B.

(5) See Appendix Table E.3. It is notable that there are no obvious differences in occupancy rates between Aberdeen and other parts of the region.

ments over the next decade are likely to involve a redistribution of facilities within Aberdeen to Forresterhill rather than centralisation in Aberdeen at the expense of other parts of the region.

TABLE 13.8
*North-Eastern Regional Hospital Board,
1961 and 1967*

	1961	1967
Employers (incl. doctors)		
Full-time	4,434	5,277
Part-time	897	1,574
N.H.S. Doctors	241	290
Honorary posts	34	71
Total beds	5,790	5,915
Overall occupancy rate (per cent) .	84.8	84.4
Population/Bed ratio	79	76
Percentage of beds in Aberdeen and suburbs	36	54
Expenditure (£'000s)	4,095	7,680
Percentage of expenditure in Aberdeen (including R.H.B.)	80	78 ⁽¹⁾

⁽¹⁾ Since the figure for 1966-67 does not enable us to exclude hospitals outside Aberdeen but under Boards of Management concentrated on Aberdeen (e.g. Kingsway, Inverurie etc.), this overestimates the concentration of expenditure in Aberdeen.

Source: N.E.R.H.B.

Medical services

13.25. The administration of health and welfare services is in the hands of three bodies: the North-Eastern Regional Hospital Board responsible for hospital services; the N.H.S. Executive Council responsible for general medical, dental and pharmaceutical services; and the local authorities in charge of community care. But the Hospital Board provides about 80% of employment in this sector. Table 13.7 presents data relating to the level of provision in regard to G.P.s and dentists, while Table 13.8 and Appendix Tables E.1 and E.3 illustrate the growth of the hospital services between 1961 and 1967. Although the pressure on dentists is above average, the patient-per-G.P. ratio is quite low,⁽¹⁾ and indicators of hospital provision such as the population per bed ratio and occupancy rates⁽²⁾ compare favourably with elsewhere. In addition, net expenditure per head by the local authority on health, welfare and child care (at £4.7) is rather higher in Aberdeen than in the other major Scottish cities. It is often argued that changes in the demand for health and welfare services are determined by population factors.⁽³⁾ This hardly applies in North-East Scotland. Although the age distribution of population is changing in a way that raises the demand for health services, we expect the population to decline over the next decade. If necessary, the health needs of the region could be provided over the next few years with present facilities and the current labour force.⁽⁴⁾ Expansion will be related primarily to an improvement in the quality of the services offered. Population projections cannot be used therefore to estimate

the demand for health services in the region in the 1970s.

13.26. Employment in Medical services is unlikely to expand at the rate of over 4% per annum experienced in the period 1961-66. The R.H.B. estimate that expenditure, in real terms, on wages and salaries of hospital staff will expand at an annual rate of 3.1% over the period 1965-75. If we assume that the higher wage bill is spread equally over all grades of workers (a simplifying, though dangerous, assumption), and also that employment in local authority and Other medical services will increase by 10% during 1966-75 (a reasonable assumption in the light of available forecasts), this yields a labour force of about 10,900 in 1975 (Projection a in Table 13.10). However, this estimate is probably on the high side. It would seem more plausible to allow for an increase in real wages and for a bias in additions to staff in favour of higher-paid grades. Moreover, limitations on capital spending and the postponement of building programmes may constrain the growth in hospital staff. These influences suggest that a halving of the 3.1% projected annual rate of increase in wage and salary expenditure may be appropriate. Leaving the projection for local authority and general medical services staff unchanged, this gives a labour force in the Medical services field as a whole of 10,100 in 1975 (Projection b in Table 13.10). This estimate seems the more plausible of the two. It results in an annual rate of growth in employment in health services over the period 1966-75, almost exactly half of that experienced between 1961 and 1966.

Education

13.27. Appendix Tables E.3 and E.4 suggest that in this sector too the level of provision in North-East Scotland, but particularly in Aberdeen City, is good. Expenditure per pupil and per head of population compares favourably with elsewhere. Teacher shortage is not serious, and indeed the situation has improved since 1961. Pupil-teacher ratios already conform to the Plowden standard (25:1) in primary schools, and to a parallel secondary school standard suggested by Vaisey and Knight⁽¹⁾ (16:1) necessary to avoid oversize classes. Levels of educational attainment are also above average.⁽²⁾ Although further education pro-

⁽¹⁾ Of course, some allowance must be made for the predominantly rural character of the region.

⁽²⁾ An average overall occupancy rate for the R.H.B. area as a whole, as given in Table 13.8, is obviously a crude measure. To be meaningful such rates have to be studied by type of bed and location.

⁽³⁾ See, for example, *The Central Borders Plan* (H.M.S.O. 1968), Ch. 4.

⁽⁴⁾ A major qualification to this generalisation is the provision of geriatric services. The population of the region aged 65 and over will probably increase by 7-10,000, 1966-78, or by 12-17%. There is a current shortage of long-stay beds in Aberdeen City and in Moray, and present plans for expansion are inadequate.

⁽⁵⁾ See W. Beckerman, *op. cit.* p. 462.

⁽⁶⁾ In 1966 the region had 8.6% of the Scottish population, but produced 9.5% of the pupils leaving school with 3-4 'O' levels, 10.0% of those with 5+ 'O' levels, 8.3% with 2 'H' levels, and 9.1% of pupils having 3+ 'H' levels.

vision is no higher than in Scotland as a whole, this is partly due to the fact that economies of scale exist in this sector and high population thresholds are required to support further educational institutions; Aberdeen City itself provides for more students relative to its population than other cities.⁽¹⁾

TABLE 13.9
*Increases in Pupils and Teaching Staff
in North-East Scotland, 1961-75*

Teachers ⁽¹⁾	1961	1966	1970	1975
Male	1,320	1,390	1,690	1,760
Female	2,745	2,810	3,000	3,225
Total	4,065	4,200	4,690	4,985
Pupils		1967	1970	1975
Nursery	n.a.	550	700	1,050
Primary	n.a.	49,255	50,400	51,400
Secondary	n.a.	24,880	26,440	31,300
Total		74,665	77,540	84,750
Overall pupil-teacher ratio	n.a.	(17.8)	16.7	17.2

⁽¹⁾ Part-time teachers are converted to full-time equivalents.

Sources: Information from Directors of Education; Scottish Educational Statistics.

13.28. It has been possible to project the increase in school teachers directly from returns received from the local education authorities in the region. The results are shown in Table 13.9. There are several assumptions behind these projections: (a) that there will be no large-scale expansion of local authority nursery schools before 1975; (b) that the school-leaving age will be raised by 1975—this assumption accounts for the faster increase in secondary school pupils in the period 1970-75; (c) that reorganisation of schools (such as the introduction of a comprehensive system in Aberdeen and the concentration of facilities on a smaller number of schools in the rural areas) will have no substantial effect on staff requirements; and (d) that there will be no marked upward shift in teacher shortages. If the pupil-teacher ratio can be regarded as an indicator of the quality of service, it can be seen

⁽¹⁾ In part, this is explained by the fact that Aberdeen draws many of these students from its rural hinterland.

that there may be some improvement up to 1970 but a decline between 1970 and 1975, associated with the raising of the school-leaving age.

13.29. To obtain a projection of the labour force in Educational services as a whole we have also to consider the growth in non-teaching staff, and of teachers in institutions other than schools, such as the University and further education institutions. We estimate that the growth in non-teaching staff will keep in line with the growth in teachers (and returns from local authorities support this conclusion). However, we expect students in further education to expand at a faster rate than the school population, and employment in this sector to expand faster than in schools or administration. The overall estimate is shown in Table 13.10. Sex ratios have been assumed to remain almost unchanged. As in Medical services, the forecast rate of growth in the labour force is lower than that achieved since 1951.

The University

13.30. Aberdeen University has been one of the most rapidly expanding growth sectors in North-East Scotland in recent years; total numbers employed by the University, for example, rose by 162% in the period 1960-1 to 1967-8, and now exceed two thousand. Apart from direct employment effects, there is also substantial income generated in the region, particularly in Aberdeen, by the presence of the University. For instance, in 1967-8 3,150 out of 4,620 full-time students (68%) lived in lodgings and halls of residence and would disburse most of their grants locally. Perhaps two-thirds of University current expenditure is spent on wages and salaries (net of tax), local purchases, rates and other local items. The local component of capital expenditure (construction workers' wages and local materials) may be about 50%. Allowing for multiplier effects, the University must have created more than £5 millions of local income in 1967-8.

13.31. The University is to a large extent an 'export' establishment capable of growing independently of levels of activity within the region. It is heavily supported by Treasury grants and also receives research grants, fees and endowments from extra-regional sources. The proportion of full-time students from outside the survey area is 48%, so that it also provides

TABLE 13.10
Employment in Medical Services and Education, 1966 and 1975
(thousands)

	June 1966 ⁽¹⁾			1975 ⁽²⁾		
	Males	Females	Total	Males	Females	Total
Medical and dental services	1.88	6.68	8.56	2.35 a. 2.30 b.	8.35 a. 7.90 b.	10.90 a. 10.10 b.
Educational services	3.45	7.57	11.00	4.25	8.60	12.75

⁽¹⁾ D.E.P. figures.

⁽²⁾ On Projections a. and b. see para. 13.26.

educational services for non-residents. Finally, it is an export sector in that a high proportion of its graduates leave the region and find employment elsewhere.

13.32. The number of students in the University continues to grow and in the current year (1968-9) exceeds five thousand. But the pace of growth is very much slower than earlier in the sixties. It is possible that there may be a further small increase up to the end of the present quinquennium in 1972; but financial stringency will be an important limiting factor and although there may be some increase in staff one must assume that it will be relatively small. The position after 1972 is, of course, completely uncertain, and again it is safer to make conservative assumptions about possible growth.

Other Service Sectors

13.33. Employment in the *Gas, electricity and water* sector is difficult to forecast because of the scope for increased efficiency. We anticipate a modest rise in employment in electricity, but this takes no account of the recent suggestion of a nuclear power station on the North-East coast. However, this would not affect the employment situation until after 1975. In the gas industry the expected rise in demand for gas may halt the recent tendency for employment to decline. The water supply functions of local authorities have recently been transferred to the North Eastern Water Board; with the planning of new water supply projects the labour force, though small, may increase slightly. Overall, the public utilities' labour force may rise by over 150 in the period 1966-75 even without any additional demand from an influx of new Manufacturing industry.

13.34. It is clear that the *Transport and communications* sector will shed labour over the next few years, though the rate of decline should be rather smaller than in the recent past—primarily because the fall in railway employment will be much less than in the past few years. Road passenger transport has declined in recent years, and further quite marked drops in employment are anticipated mainly due to productivity improvements in urban centres, in particular the introduction of one-man buses which should be widespread in Aberdeen by 1975. Although some country bus services are clearly unprofitable, it may be possible to maintain them if opportunities for joint services (e.g. with the G.P.O. as in East Lothian) are exploited. The prospects for Road haulage are unclear due to the unpredictable consequences of the Transport Act. But respondents to the Road Haulage Enquiry anticipated some expansion in their labour forces. How representative these were of the industry as a whole is unknown, but we have allowed for an expansion of over 150 in employment in Road haulage between 1966 and 1975. Employment in Port transport is expected to decline by 9-10%. The one field in which traffic may expand rapidly, Air transport, employs very little labour in the region.⁽¹⁾ The Postal services and telecommunications field is complicated by the general tempo of technical

change: the transfer to automatic systems should increase the demand for engineering staff while reducing that for telephonists. The net effect on employment should be a very modest increase. The Miscellaneous transport services and storage category is unlikely to change much over the next few years. The aggregation of these various changes yields a net fall of more than 800 jobs in Transport, with the brunt falling on male employment.

13.35. Employment prospects in the *Leisure, banking and finance* field are difficult to assess. This sector is comparatively under-represented in the region, and its position over the past few years has remained static despite a fast rate of expansion in Scotland as a whole and in Great Britain. Moreover, its labour force is vulnerable to the introduction of automation, and may also suffer from the effects of S.E.T. On the other hand, there are a few favourable demand factors such as the growth in the banking habit. *Local demand* for Insurance, banking and financial services may grow fast enough to stimulate a modest employment growth, though at a much lower rate than either recent experience or forecasts at the national level. The projection of less than 900 additional jobs may be too high if automation makes inroads in the region before 1975.

13.36. In the *Public administration* sector, the marked fall in employment in the recent past is apparent rather than real due to reclassification. Local authority employment has, in fact, expanded in recent years, though employment in National Government service has been more unsteady. National Government employment is very limited in North-East Scotland; in the absence of Government action to introduce a specific Government departmental branch into the region, little change is expected. About a third of the workers in this sector are employed in Aberdeen City, mainly in routine work in departments like the Inland Revenue and the Department of Health and Social Security. Most of the rest consist of civilians attached to defence establishments, particularly in Moray and Nairn.

13.37. Defence establishments are an important 'export' sector in that they are sustained by expenditure from outside the region, in this case Government expenditure. In the first place, these establishments employ about 870 civilians (82% of whom are males).⁽²⁾ Of these, about 690 are employed in Moray and most of the rest in Aberdeenshire. Apart from this, the location of about 3,750 service personnel in the region may have a substantial income-creating effect. As in the case of civilians, there is a high concentration in Moray (2,900) divided between the R.N. Air Station Lossiemouth and R.A.F. Kinloss. Their impact is magnified by the fact that over a thousand servicemen live in married quarters or 'hirings' along with their dependants, while about four hundred live in other private accom-

⁽¹⁾ Even in 1975 B.E.A.'s permanent staff is expected to be less than 40.

⁽²⁾ Of the 870 civilians, 190 are classified as being in non-industrial classifications (e.g. clerical and executive work).

moderation. Although the local impact is not negligible (civilian payrolls alone amount to £ $\frac{1}{2}$ million per annum), it can easily be exaggerated.⁽¹⁾ To some extent, defence bases can be regarded as enclaves within a region, with strictly limited spillovers into the surrounding area. On-base spending is high, many military establishment supplies are centrally rather than locally purchased, and the personnel are often migratory with stronger links with other parts of the country than the area surrounding the base. Empirical studies, mainly in the United States, have shown that the local multiplier effect of a defence base is much smaller than that of a private manufacturing establishment of similar size.⁽²⁾ On the other hand, the establishments in Moray do materially affect levels of economic activity in that part of the region, given the relative size of the establishments and the population of that area. If these bases were to close the local impact would be more than marginal. In the *Statement on the Defence Estimates 1969* (Cmd 3927) it was announced (Ch. 8, para. 30) that following defence policy changes three Naval air stations, one of them Lossiemouth, will no longer be needed by the Royal Navy from about 1971-2. However at the same time it was stated that the R.A.F. expects to take over Lossiemouth when the Navy leaves. But what effects this will have on the personnel establishment of the base is not known at this point of time.

Local Authorities

13.38. The exact size of the labour force in this important sector, even for the present and the recent past, is a matter of conjecture. Re-classification of labour into new categories, beginning in 1963, gives a false impression of declining local authority employment in the early 1960s. Moreover the M.L.H. No. 906, Local government service, covers less than 30% of the total numbers actually employed by local authorities. More comprehensive estimates are presented in the annual *Rating Review*, published by the Institute of Municipal Treasurers and Accountants (Scottish Branch); this suggests that local authority employment in the survey area in 1967 was 14,540.⁽³⁾ However, the results of a direct questionnaire to local authorities in the region reveal that even this estimate is incomplete.

13.39. The estimates in Table 13.11 (below) are an approximate indication of total numbers employed by local authorities in the region. They indicate that local authorities employ over 10% of the total labour force of the area. The estimates differ so much from the D.E.P. totals because they include employees in education, health and welfare services, transport and public works departments.⁽⁴⁾ About one-half of the total labour force consists of males, though the male share varies considerably from one authority to another.⁽⁵⁾ Moreover, about 55% of the total labour force was composed of manual workers rather than of A.T.C.⁽⁶⁾ or teacher grades. Local authority employment in the region expanded by 10% between 1960 and 1967. This expansion has affected most depart-

ments, though health and welfare grew faster than most, while employment in education increased at a similar rate to Local Government employment as a whole.

13.40. The rate of expansion in Local Government services is largely conditioned by the national economic situation and by national investment constraints, and hence is functionally related to the rate of growth of the economy as a whole. However, there is some evidence of a trend for local authority expenditure to rise a little faster than G.N.P., and increased supply and higher quality of Local Government services will probably give rise to increased demands for labour, especially in the social service field. On the other hand, local government administration offers considerable opportunities, within larger authorities at least, for the extension of A.D.P. methods in routine work. Moreover, there is much scope for economies in the use of manual labour by local authorities, and the Prices and Incomes Board proposed incentive schemes to promote these.⁽⁷⁾ We expect that these latter considerations will hold down the growth in Local Government employment to modest rates.

13.41. The findings of the Royal Commission on Local Government in Scotland will be published too late to be taken account of in this Report. If they should recommend a concentration of major local government functions on

⁽¹⁾ It was hoped that an estimate could be made from payroll and local purchases data of local income created by the presence of the bases, but the information received was inadequate for this purpose. The gross payroll of service personnel stationed in the region probably amounted to about £5.7 millions in 1967. We have no evidence from which we might assess the proportion of this total spent locally outside the bases. Apart from tax, other contractual and standard deductions will tend to be higher for service personnel, especially those living on the base. Because of the provision of furnished accommodation for married servicemen and barrack accommodation for others, and because of the services offered on the base itself, the pattern of local spending for all service personnel will differ considerably from that of civilians; and their propensity to consume locally will be much lower than that of civilians. The total first round of local spending out of service payrolls in the region is probably no higher than £2½ millions. For Moray, the one area within the region with a marked dependence on defence bases, local expenditure from payrolls may be about £1½ millions.

⁽²⁾ For the most recent study see S. J. Weiss and E. C. Gooding, "Estimation of Differential Employment Multipliers in a Small Regional Economy", *Land Economics* 44 (1968).

⁽³⁾ This estimate embraces all full-time salary and wages earners, including teachers but excluding fire and police personnel, plus part-time employees converted to an approximately equivalent full-time basis.

⁽⁴⁾ In D.E.P. statistics these appear under M.L.H.'s 672, 674, 702 and 500. Up to May 1968, water supply workers—M.L.H. 608—were also employed by local authorities.

⁽⁵⁾ The male fraction of the much narrower D.E.P. classification rises to about three-quarters. This is due, of course, to the exclusion of departments such as education and health and welfare which employ a high proportion of women.

⁽⁶⁾ Administrative, technical and clerical grades.

⁽⁷⁾ P.I.B. Report No. 29, *The Pay and Conditions of Manual Workers in Local Authorities, the National Health Service, Gas and Water Supply* (Cmd. 3230, March 1967), para. 107.

larger authorities, we might expect in the long run a rise in efficiency and some saving in labour costs. However, it is most improbable that such results would be visible before 1975. On the contrary, the short-run effects of a wide reorganisation in Local Government might lead to losses of efficiency and under-utilisation of labour during the teething period. There are other forms of reorganisation under way: for example, that of the social services by the creation of new social work departments under the Social Work Services (Scotland) Act. Also, there is a possibility of changes in the administrative structure of the Health Services as a whole. Large-scale reorganisation of the N.H.S. could involve the transfer of functions either to or from the local authorities. This raises the whole question of changes in function. As pointed out above, in May 1968 water supply functions were transferred to the North East Water Board; similarly, the disbandment of Civil Defence also removes a function, though on a much smaller scale. The evolution of new functions, or the transfer of existing functions from the local authorities, could easily distort any projections of Local Government employment. Nevertheless, it is not too misleading to suggest that neither changes in function nor radical reorganisation will have much immediate effect on the labour force required to provide the services at present in the hands of local authorities. Thus, the projections in Table 13.11 are not so much estimates of Local Government employment in 1975 as of the labour requirements necessary to man the services that local authorities currently supply.

13.42. Subject to these qualifications, Table 13.11 gives two projections for total local authority employment in 1975. Projection *a* is based upon an extrapolation technique, whereas *b* is derived primarily from the projections of individual authorities. In view of the comments

in para. 13.39, projection *b* would seem to be the most reliable forecast at this stage. Also in Table 13.11 we give parallel forecasts for the more narrowly defined D.E.P. category for use in conjunction with other Service sector employment projections in Section I of this chapter; as before, Projection *b* would appear the more likely of the two.

TABLE 13.11
Employment in Local Authorities in N.E. Scotland, 1960-75
thousands

	1960	1967	1975: projections ^(a)
Total local authority employment	14.70 ^(b)	16.25 ^(c)	18.20 } <i>a</i> 17.40 } <i>b</i>
D.E.P. category	— ^(d)	4.31 ^(c)	4.88 } <i>a</i> 4.65 } <i>b</i>

^(a) Estimates based on information from local authorities, The Rating Agency, and D.E.P. figures.

^(b) Because of reclassification changes no figure is shown for 1960.

^(c) 1966 figure.

^(d) For the basis of these projections see para. 13.42.

Miscellaneous Services

13.43. This heterogeneous group has expanded quite rapidly in the past. There is no single dominant industry, but three groups—hotels, garages and domestic service—account for 63% of total employment. The experience of individual industries has been very mixed in the recent past (see Table 13.12). They also vary considerably in their reliance on male labour. As in other Service industries some of the changes in past employment have to be treated with

TABLE 13.12
Miscellaneous Services in North-East Scotland

Minimum list heading	Employment, 1966	Proportion of total employment per cent	Proportion of male employees in each category per cent	Unemployment rate, June 1966 per cent ⁽¹⁾	Change in insured labour force, 1961-66 per cent
Cinema, theatre, radio, etc.	840	5.3	47.1	1.6	+13.9
Sport and other recreations	600	3.8	57.0	1.7	+77.4
Betting	200	1.4	62.4	0.8	+61.3
Catering, hotels etc.	5,060	32.3	29.7	2.5	+7.4
Laundries	880	5.4	24.2	1.2	+1.6
Dry cleaning etc.	240	1.6	19.7	2.8	-8.8
Motor repairs, garages etc.	3,580	22.5	81.5	0.9	+18.4
Repair of boots and shoes	60	0.4	84.1	1.6	-38.3
Hairdressing	800	5.6	18.7	1.3	+11.6
Private domestic service	2,160	14.0	12.8	3.6	-20.9
Other services	1,240	7.8	44.3	1.4	+32.0
Total Miscellaneous services	15,720	100.0	41.7	2.1	+7.6

⁽¹⁾ Unemployment as a per cent of employees (including unemployed) in each category.
Source: D.E.P.

caution; the main group affected is Sport and other recreations where reclassification has artificially boosted the expansion in the labour force. We forecast an expansion of 450-1,100 jobs in this sector over the period 1966-75.

13.44. Motor repairers and garages is the key sector in this group: its expansion more than accounts for the total expected increase in Miscellaneous services employment, and it is particularly important because most of the jobs created will be for men. The main source of projection at the national level is a recent publication by N.E.D.O.⁽¹⁾ This forecasts a rate of growth in the national car fleet of between 6.5% and 8% per annum for the years up to 1970, and of 5.6% for 1970-75. Assuming that past rates of growth of productivity in garages continue, this would mean a growth in this section of the national labour force of between 34% and 42% between 1966 and 1975. How far do these national projections provide a basis for estimating employment in this sector in the survey area? Some relevant statistics are assembled in Table 13.13. These show that the level of car ownership in the area is slightly higher than in Britain as a whole, but much higher than in Scotland. On the other hand, the rates of growth of both the car fleet and garage employment were rather lower in the survey area than in Great Britain. There is no contradiction here, for the higher ownership levels in North-East Scotland reflect mainly geographical factors. There are five reasonable bases for projection of the employment levels: (a) at the lower national rate estimated by N.E.D.O. (3.1% per annum); (b) at the higher N.E.D.O. rate (3.9%); (c) the recent local rate of growth (3.4%); (d) at the lower national rate deflated to take into account the slower growth of the

local car fleet and garage employment in the recent past (2.4%); and (e) at the higher national rate deflated in the same manner (3.1%). Three of these estimates are very similar, and the most reasonable guess would be a rate of growth of this magnitude. Estimates for 1975 are compared with the 1966 level of employment in Table 13.14, and the lower and higher limits ((d) and (b) above) are given for comparison. We have assumed that 80% of the additions to the labour force will consist of men though there could be a shift towards employing more women. The other possibility which could throw these estimates out is an acceleration in productivity growth; but present indications suggest that it may be difficult even to maintain the past rate of improvement.

13.45. Despite these qualifications, it is safe to assume that there will be a substantial increase in employment in the garage trade in the period 1966-75, involving a minimum increase of 860 new jobs and a maximum of 1,490. The most reasonable projection suggests an expansion of the labour force of 1,100-1,150 including more than 900 additional male jobs.

TABLE 13.14
*Employment in Motor Repairers and Garages,
North-East Scotland, 1966-75*

	Males	Females	Total
June 1966 (actual) ⁽¹⁾	2,320	660	3,580
1975 (most likely estimate)	3,830	885	4,715
1975 lowest estimate	3,610	830	4,440
1975 highest estimate	4,115	955	5,070

⁽¹⁾ D.E.P. figures.

TABLE 13.13
*Motor Vehicles in North-East Scotland:
Number and Growth Rates*

	Survey Area	Scotland	Great Britain
Total vehicles 1960	89.3	684.5	9,383.8
(thousands) 1966	120.6	991.0	13,212.7
Car fleet 1960	52.7	407.7	5,525.6
(thousands) 1966	83.2	720.8	9,513.3
Population per car 1966	5.4	7.2	5.6
Annual rate of growth in car fleet 1960-7	7.9%	10.0%	9.5%
Annual rate of growth in Motor repairers and garages employment, 1961-6	3.4%	3.5%	4.3%

Sources: Highway Statistics (M.O.T.); Future Demand for Garage Workshops Services (N.E.D.O.); D.E.P. (for some N.E. and Scottish figures).

⁽¹⁾ N.E.D.O., Economic Development Committee for Motor Vehicle Distribution and Repair, *Future Demand for Garage Workshop Services* (H.M.S.O. 1968). This report argues that the rate of growth of the car fleet is the dominant influence on the demand for garage services (and on the rate of increase in garage employment).

13.46. The largest employer in the Miscellaneous services category is the Catering, hotels etc. group. Its future course of employment is difficult to forecast. We suggest below (para. 13.60) that the changing pattern of tourism may militate against organised hotels in favour of other kinds of accommodation. Even if the demand for hotel services increases, the scope for managerial improvements and labour-saving methods is substantial. On the whole, it seems unlikely that hotel employment will expand in the region before 1975 unless there is a marked upward shift in tourist activity in the region. We expect a further contraction in employment in Domestic service, perhaps of the order of 500-600 employees over the survey period. Employment changes in other services in the Miscellaneous group will, because of their small size, have little effect on the total. Some sectors will continue to expand their labour forces under the stimulus of rising incomes, for example, Hairdressing and Sports and other recreations. Others, such as Laundries and Dry cleaning, may decline, accelerated by S.E.T. Indeed, if it were not for Motor repairers and garages, employment in Miscellaneous services would decline up to 1975.

III. Special Topics

The Location of Offices

13.47. Clerical workers account for a share of the labour force in Aberdeen City lower than in Britain as a whole and not much higher than the Scottish average.⁽¹⁾ This reflects the low concentration in the region of important office employment sectors—National Government service, Insurance, banking and finance, and Manufacturing industry itself. Most existing offices cater for local and regional needs, and there has been little new office building in recent years. The entry of a major new office employer, especially one in business at the national level, could be an important stimulus not only to Aberdeen but to the region as a whole. What are the advantages and disadvantages of Aberdeen as a centre for new office development?

13.48. In some respects, Aberdeen is well-placed. There is a sizeable pool of clerical labour which could easily be expanded in several ways: by attracting more of the new entrants to the labour force (already 17–19% of school-leavers enter clerical employment as their first job); by recruiting from outside the city, a task facilitated by the concentration of further commercial education facilities in Aberdeen itself; by drawing upon married women, especially for part-time work; by retaining potential migrants and perhaps pulling back some past migrants.⁽²⁾ The outstanding amenities of Aberdeen City, which were stressed in the earlier part of the Report and which are of particular importance in the attraction and retention of this type of employment, might make it an attractive location for an office organisation from outside.

13.49. On the other hand, the City has certain drawbacks, although some of these are remediable. Unlike many other cities, there is not much in the way of a stock of office accommodation ready to be taken over by new firms. The land-use zoning of the City allows for office development in the general commercial zone, but such development is unlikely to be undertaken except at the instance of a specific client. However, if a large firm from outside (such as a building society or insurance company head office) needed a site there is no doubt that one could be found. Finding a suitable site, however, is not the only possible accommodation problem; demolition and construction costs are rather high, land values are no lower than in other cities, while rating costs if no worse than in other Scottish cities are probably higher than in most English cities of comparable size.

13.50. Aberdeen's most serious disadvantage is geographical isolation and the communications problem. All the studies of decentralisation of offices have stressed the importance of external economies relating to the ease of contact with external organisations (or where single departments are decentralised, contact between departments of the same firm). Where external contacts are necessary for a firm's efficiency, location within London or some other major centre may be imperative. However, departments engaged

in routine work (accounts, records, sales and so on) frequently do not need such contacts, at least on a day-to-day basis, and can often be separated from the specialised and senior executive staff who would continue to work in Central London.⁽³⁾

13.51. It is clear that Aberdeen cannot compete from a communications standpoint with decentralised sites in South-East England or more accessible centres such as Birmingham or Leicester. Although overnight trains and the air service are good, the times taken are still uncompetitive with many nearer locations. Also postal communications with England are rather unsatisfactory.⁽⁴⁾ Firms with headquarters in London and decentralised departments can, of course, obtain intra-firm means of communication, but the costs of these rise heavily with distance; for example, the hiring cost of a private telephone line between London and Aberdeen would be £3,400 per annum.⁽⁵⁾ The same is true of telex and private telegraph circuits; while long distance closed circuit T.V. links are very rare and their cost is prohibitive for most firms. Also, although the G.P.O. provides facilities for transmitting facsimiles these are little used.

13.52. The attraction of office developments from outside may be hampered in other respects. The absence of a base of nation-serving offices in Aberdeen means that there are few external economies. Moreover in regard to labour supply, offices will make increasing use of A.D.P. methods and will eventually require large numbers of computer personnel and other technicians. The relative absence of training facilities for computer staff in Aberdeen, and the lack of employment opportunities at present for trained workers in this field, are likely to become increasingly a disadvantage.

13.53. This analysis suggests that Aberdeen has insufficient advantages to attract office developments from outside in competition with other cities. The conclusion is confirmed when we look at the evidence of trends in office de-

⁽¹⁾ These shares were 12.5% in Aberdeen 11.4% in Scotland and 13.0% in Great Britain in 1961 (*Index of Population data*).

⁽²⁾ The propensity of young clerical workers to migrate from the region is rather higher than that of skilled manual workers (though lower than that of professional and managerial workers).

⁽³⁾ Nevertheless, even in such cases internal contacts would be necessary. A recent study suggested that "proximity to London is an important locational factor partly because it enables paper, files and sometimes personnel to be transferred from a branch office to headquarters departments in London within a matter of a few hours." M. Wright, "Provincial Office Development", *Urban Studies*, 4 (1967), p. 245.

⁽⁴⁾ Last posting times in Aberdeen for first delivery in London, Manchester and Birmingham are 17.45, 16.15 and 14.15 respectively.

⁽⁵⁾ This compares with £700 per annum for a distance of 50 miles and £1,300 per annum between London and Birmingham. On the other hand, Aberdeen is not at a great disadvantage relative to Glasgow since the hiring cost between London and Glasgow is £3,200. Moreover, a part-time private line (2 hours daily, five days a week) costs the same for any distance over 250 miles (£590). All the charges mentioned here refer to the cheapest available circuit (S.1).

centralisation and at the competitive advantages of other cities in Britain.⁽¹⁾ These studies throw up several findings, none of which are reassuring to Aberdeen:

- (a) there is a very heavy concentration of commercial offices in London and South-East England.
- (b) 'decentralisation' in almost all contexts means a move within the south east from Central London.⁽²⁾
- (c) outside the south east office development is concentrated in cities far larger than Aberdeen. There is some evidence that there are substantial external economies of scale in this sector (the benefits of already large business centres, of pools of trained office workers and first-class training facilities). Moreover, many large provincial centres not only have spare capacity at present, but also considerable scope for increasing office floor space.⁽³⁾
- (d) investigation into the location decisions of migrant office establishments all show that direct economic costs (such as rent and rate savings) are secondary to less measurable influences, particularly communications (in the sense of convenient opportunities for face-to-face contact with other departments in the same firm and with other firms). Firms rejecting a move also stress the value of easy external contacts, good communications with the rest of Britain, tradition and the prestige of a central London address.

13.54. It is clear that without further inducements or action Aberdeen is unlikely to attract any major office developments from outside in the foreseeable future. Yet such an influx would confer substantial social benefits on the region, and Aberdeen's locational advantages compare reasonably well with elsewhere apart from communication costs. Remedial action is possible on the following lines: (a) more initiative by Aberdeen City in seeking out potentially migrant firms; (b) consideration of Aberdeen in further decentralisation decisions regarding Government departments (especially those involved in routine work);⁽⁴⁾ (c) extension of computer staff training facilities in Aberdeen, since any area offering a pool of these skills may have a definite edge in attracting offices subject to decentralisation; (d) financial assistance to cheapen and make more effective the transmission of data; (e) a strengthening of negative controls on office building in South-East England *as a whole*, but applied discriminately to office establishments in which long distance decentralisation would not impose higher costs.

Tourism

13.55. Tourism is important to a region deficient in Manufacturing like North-East Scotland because it is largely a component of the 'export base', injecting income into the region from outside. Moreover, the long-run trend of tourism is strongly upwards both within Britain and overseas, and as incomes rise tourist activity should increase more than proportion-

ately. We believe that there are substantial opportunities in tourism which the region can exploit, and that expansion should be encouraged.

13.56. However, there is a serious danger that tourism might be regarded as a panacea for the region's troubles, and provide a convenient excuse for inaction in other spheres (e.g. measures to attract more Manufacturing industry into the region). It is easy to take this stand because the lack of quantification of the impact of tourism, and the impressionistic nature of the evidence available, make extreme positions difficult to refute.

13.57. To argue that tourism can solve the problems of North-East Scotland is to ignore the fact that the region contains a City region with a population of a quarter of a million, sustained by a variety of economic activities among which tourism is very minor. Moreover, tourism can do little to provide the male jobs for workers displaced from Primary industry, which are necessary in order to cut down net migration. Furthermore, the region's residents, particularly from Aberdeen City, make a substantial contribution to the holiday trade of the region, especially on Deeside and in Moray and Nairn: not all tourist expenditure comes from outside the region.

13.58. Employment and income creation due to tourism can only be estimated crudely. Hotels and catering is the only industry in which employment is largely maintained by tourism, and even here the contribution of residents and local business is substantial. Tourism probably generates a limited amount of secondary employment in entertainments, sport and recreation, distribution, garages and passenger transport, but on a very modest scale. With regard to these sectors the income generated may be substantial, but the net effect will normally be to raise sales, or revenue, per employee rather than to create additional jobs. This is an important point and justifies our

⁽¹⁾ Important sources are the Annual Reports of the Location of Offices Bureau; Economic Intelligence Unit, *A Survey of Factors Governing the Location of Offices in the London Area* (1965); J. V. Auscott, "Dispersal of Offices from Central London", *Town Planning Review* 35 (1960); J. S. Wahe, "Office Decentralisation: An Empirical Study", *Urban Studies*, 3 (1966); M. Wright *op. cit.*, and E. Hammond, "Dispersal of Government Offices: A Survey", *Urban Studies*, 4 (1967).

⁽²⁾ Of a sample examined by Wahe only 15 out of 114 firms moving from Central London moved more than 40 miles. Similarly, the Location of Offices Bureau also showed that between 1963 and 1967 only 16% of jobs moved were dispersed more than 80 miles from the G.L.C. area. Of course we have no measure of the degree of pressure at present being exerted by the L.O.B.: hitherto the Bureau has regarded its function as dispersing offices from London rather than to any particular areas—such as the development areas.

⁽³⁾ In Glasgow office floor space could increase from 11.0 to 13.6 million sq. ft., 1963/64–81, with an additional 3 million sq. ft. after 1981. In large provincial centres, considered as a whole, there is room for 20.5 million sq. ft. additional capacity before 1981, and a further 10.2 million after that date.

⁽⁴⁾ Aberdeen is grossly under-represented in National Government employment, while concentration in London and South-East England (despite a recent bout of decentralisation) is nearly double the national average (Hammond, *loc. cit.*).

estimate that less than 3½% of the region's man-years of employment can be assigned to the effects of tourism. This is based on the following assumptions: that tourism accounts for 40% of hotel employment in Aberdeen (where commercial trade is large) but 80% of hotel employment elsewhere in the region; for 33½% of man-years of employment in cinemas, theatres, radio, etc.—probably an over-estimate since large employers such as Grampian T.V. cater mainly for local needs; for 40% of man-years in Sport and other recreations; for 10% of employment in Motor repairers and garages—almost certainly an over-estimate since there is little evidence of seasonal adjustments of labour in this sector; and for 5% of man-years in Retail distribution (in this sector the income effect is much larger than the employment effect) and in road and rail passenger transport (a very high proportion of tourists visiting the region travel by car). Of course, the impact on employment varies from centre to centre. In Nairn, for example, one in twenty of the labour force is employed in hotels and catering alone: along with such Deeside and Speyside centres as Braemar, Ballater and Grantown, it clearly depends on tourism much more than other parts of the region. As suggested above, tourism generates more income than employment. The value of tourism in 1964/65 may have been about £8½ millions, or between 6 and 7% of total net regional income in that year.⁽¹⁾ Though the estimates for both employment and income are subject to rather wide margins of error (and the gap between them may be a little too large to be plausible) they clearly place tourist activity in perspective. Even if tourist activity disappeared altogether, the effects on employment would be fairly slight, unless we can adhere to the unlikely assumption that many service establishments serving tourists operate on the margin of profitability and would close down if the tourist contribution to their trade fell away.

13.59. Apart from centres near the Cairngorm skiing districts (which within the survey area cater primarily for day-trippers rather than long-stay tourists), the season is very short in the region. Despite a slight tendency for it to lengthen in recent years, it is little more than two months. Thus, the demand for labour in the tourist industry is highly seasonal. Measures to stimulate this demand, except in areas where no alternative source of employment exists or can be created, may have adverse effects on economic stability and may hinder expansion potential in other sectors. Moreover, the short season scarcely strengthens the case for substantial improvement in tourist facilities since these are likely to be grossly under-utilised. Of course, there are exceptions to this generalisation. A secondary self-contained holiday centre in west Deeside, following the Aviemore pattern could be used over much of the year. Caravan parks over much of the region could be viable especially if they were, in part, static sites and perhaps catered for residential all-year needs as well as tourists. Hotel developments in Aberdeen City can rely on commercial and local trade to supplement tourism, and boarding houses can

utilise their accommodation by taking in students outside the holiday periods. But these are palliatives, and do not destroy the general thesis that the short season severely discourages investment and makes many otherwise attractive projects uneconomic.

13.60. North-East Scotland has shared in the growth of the holiday habit in recent years, but it is unlikely ever to appeal to the mass market. Furthermore, a decreasing proportion of visitors to the region come for one-centre holidays: climatic conditions and the growing popularity of motor-touring holidays are a major factor in this trend. The consequence is that a different type of location and facilities are required from those needed to serve a mass market. Economies of scale in the provision of tourist facilities are substantial, and the number of visitors, even to a centre like Aberdeen, possibly falls below the threshold needed to justify the large-scale entertainment and catering facilities found in resorts elsewhere. We do not deny the tremendous scope for improvement in tourist facilities, but the main need is for strategically placed small-scale developments.⁽²⁾ The region offers a considerable variety in its beaches, scenery, places of interest and opportunities for outside active pursuits. It should set out to exploit these by catering for the increasingly popular mobile types of holiday. Thus we see a considerable future for North-East Scotland in serving the demand for touring and camping holidays, by the establishment of motels and caravan sites (here, as remarked in Chapter 11, the Forestry Commission could play a useful part) and by improving the quality of its hotel accommodation.⁽³⁾ But the effects on the region's livelihood are unlikely to be more than marginal.

13.61. For these reasons, although tourism has a more than negligible impact on the region's development, it does not have a dominant role. The Scottish Tourist Board's estimates of the number of visitors to the region show complete

⁽¹⁾ This very approximate estimate starts from the rough figure of £65 millions of tourist expenditure in Scotland as a whole, in 1964/65, quoted in *The Scottish Plan*. It assumes that the proportion accruing to North-East Scotland was equal to the region's proportion of total visitors to Scotland as estimated by the Scottish Tourist Board, i.e. about 13% (and also incidentally, to the region's proportion of total recorded beds available in Scotland—again about 13%).

⁽²⁾ One problem is that the rates of return on investment in tourism are probably lower than in Manufacturing. Though this disparity has been reduced by the recent scheme for hotel development grants and loan assistance (Board of Trade, *Hotel Development Incentive*, Cmd. 3633, 1968), equivalent subsidies do not exist for other Service developments connected with tourism. This is particularly so now that Service projects providing less than 50 additional jobs are no longer eligible for assistance under the Local Employment Acts. Moreover, in regard to the new hotel subsidy scheme aid is available only for projects supplying more than ten bedrooms, a scale of unit which may be inappropriate to some of the smaller centres in this region. However, new hotels below this size may not be viable even if they can rely on high occupancy rates.

⁽³⁾ The car is so dominant as the chief tourist mode of transport that no additional provision for public passenger transport facilities can be justified on tourism grounds.

stability over recent years;⁽¹⁾ but these conflict with the evidence, admittedly impressionistic, which we have received from the region's holiday areas. This points to a substantial expansion in tourism in North-East Scotland over the past few years. Probably part of the discrepancy can be explained by the shift in emphasis to motor-ing, caravanning and camping, which has led to a sizeable increase in the number of un-recorded visitors. If we accept the evidence of a recent increase in tourism, and the possibility of future expansion, the question arises as to the adequacy of facilities provided. There is no serious shortage of accommodation in the region as a whole. The number of licensed hotels has risen by over 10% since 1960, and though the number of boarding houses has declined this has been offset by an increase in casual bed-and-breakfast accommodation. Holiday resorts such as Nairn operate near full capacity in July and August, and Aberdeen City suffers from a shortage in August. At present, there is sufficient spare capacity in districts around Aberdeen to cope with any overflow requirements. Moreover, accommodation in many parts of the region is inadequately utilised. A survey on Deeside showed that one half of 64 establishments surveyed were operating with a bed occupancy rate of below 60% (yet a 70% rate is regarded as an approximate viability criterion).⁽²⁾ There may be shortages of particular types of accommodation, but not an overall shortage in the region as a whole. An improvement in local information services, including more co-operation between adjacent authorities, would help to improve the utilisation of existing accommodation.

13.62. Finally, assuming that the trend towards touring holidays and against single-stay centres will continue, it is highly inefficient for individual towns to provide their own tourist literature and publicity. The qualities and variety offered by the North East as a holiday area are not well known outside Scotland, and it is important to publicise them to other areas. But, given the character of the region and the current trends towards mobile holidays, it would be much more effective were the North East to present itself as a single holiday region with varied attractions and possibilities. We recommend, therefore, that consideration be given to the establishment of a North-East Tourist

Board which would be responsible for publicising the region as a whole, and which would employ a qualified tourist officer to do so. Financial support for such a Board should come from the local authorities of the region.

Summary and Conclusions

13.63. The main findings and conclusions of this examination of the Service sector may be summarised very briefly as follows:

- (i) The Service trades in the North East employ a higher proportion of the regional labour force than in Great Britain as a whole, but the difference is not very great. Moreover, not all the Service activities are well established in the region: Distribution and Professional and scientific services are strongly represented but, among others, Insurance, banking and finance and National Government service are under-represented.
- (ii) Expansion in Service trades employment in recent years has been heavily concentrated in female employment, with a decline in total male employment. Women now account for more than half the present employment in the sector.
- (iii) On the projections made here total employment in the Service trades will increase up to 1975, within an estimated range of 1,800 to 4,500 jobs. The increase will be predominantly in jobs for women, though increases in employment for men in Professional and scientific services and Motor repairs and garages may be substantial.
- (iv) Aberdeen City offers certain advantages for the expansion of office employment, but its geographical position weighs against such development. The City is unlikely to attract such employment from outside the region in the absence of special inducements or other action to decentralise the office activities of private and public bodies.
- (v) Tourism, although all-important in some places in the North East, probably accounts for only a small proportion of total regional employment, though it is more important as a creator of income. Further expansion is expected and this calls for a number of strategically placed small-scale developments to meet the changing character of tourism. The creation of a regional tourist board which would promote the North East as a single holiday region could bring important benefits.

⁽¹⁾ These estimates fluctuate within the range 653-703,000 visitors per year, 1960-66.

⁽²⁾ We are indebted to the Aberdeen University Department of Geography's research team on tourism in the East Cairngorms for this information. Their very comprehensive study, entitled *Royal Geopline County*, of the existing resources and the development and impact of tourism in this particular part of the North East, is to be published in April 1969.

The Construction Industry

ROBERT SHAW

14.1. As an employer of labour the Construction industry in the North-East of Scotland has been one of the fastest growing industries over the period 1961 to 1966. In terms of growth rates it has shared top place with Food, drink and tobacco and with Professional and scientific services; all three activities recorded a 20% increase in employment over the five-year period. This rate of growth compares with a Scottish rate of 14% and a British rate of 13%. As a source of new jobs in the area Construction has been second only to Professional and scientific services, bringing an additional 2,800 jobs against the 3,900 of the latter. As a source of additional male employment, however, the Construction industry led all other industries during 1961-66, with 2,600 new jobs; the next best, Professional and scientific services, yielded 1,200 new jobs for men. If we take the relative size of employment in the Construction industry of Britain as a whole as a standard, in 1966 the North East had more than its 'share' of this industry—16,300 employees against an expected figure of 14,100.

14.2. In 1967 the industry in the area consisted of some 750 firms, including in that figure the relevant local authority departments. The structure of the industry in the North East is similar to the national pattern. In the British industry as a whole over 82% of all firms employ fewer than 13 people; in the survey area almost nine out of ten firms employ less than ten people. At the other end of the scale in Great Britain fewer than one quarter of 1% of firms employ over 600, while in the North East only two-thirds of 1% employ over 500.

14.3. Information about the Construction industry in the North East of Scotland, as it was in mid-1967, was gathered mainly by a postal questionnaire which was circulated to all firms employing more than 50 persons, to 50% of firms with 11-50 workers, and to 10% of those employing 10 or fewer workers.⁽¹⁾ Of this number replies were received from 35, or 25% of the sample. However, these firms employed 8,000, or 52% of the labour force, so that the information obtained is clearly biased in the direction of larger firms. There will therefore be an over-emphasis on public building and civil engineering at the expense of private building and of repairs and maintenance, since the latter are the traditional work of the small man. One result of

this is to distort the structure of the labour force. Of the 8,000 workers covered by our questionnaire 37% were skilled, 6% were apprentices, 6% were administrative and technical, while the remaining 51% were labourers and clerical and secretarial workers. The heavy weighting of local authority departments and civil engineering firms within this total tends to reduce the skilled and the apprenticeship categories.

14.4. The firms responding to our questionnaire were responsible in 1967 for an output of £19.9 millions. Of this work 75% was carried out in the survey area, just over 22% in the rest of Scotland, and the remaining 3% elsewhere in the U.K. The percentage breakdown of the output figure for 1967 is shown in Table 14.1.

TABLE 14.1

*Construction Questionnaire:
Analysis of Respondents' Output, 1967
per cent of total value*

Housing		New buildings		Civil engineering	Repair & maintenance
Private	Public	Private	Public		
4.3	22.1	8.1	26.6	24.6	14.2

These figures illustrate the tremendous dependence of the Construction industry in the area on public expenditure. If we assume that private expenditure on civil engineering is approximately equal to public expenditure on repair and maintenance, and simply add together the categories of public housing, new public buildings and civil engineering we find that this accounts for 74% of the value of work done. Obviously the future for the Construction industry in the area is determined by the course of public spending.

14.5. A very broad distribution of costs into three categories was also sought from the firms, for 1967. This is given in Table 14.2. From this breakdown one can derive some idea of the income-generating power of expenditure on Construction in the area. There are few indigenous raw materials available in the area, apart from aggregates: all the other materials are imported, representing a 'leakage' of ex-

⁽¹⁾ For further details see Appendix E III.

TABLE 14.2
*Construction Questionnaire:
Analysis of Respondents' Costs*
per cent of total

Building or civil engineering materials	44.5
Wages and salaries	41.6
Others (overheads etc.)	14.0
Total	100.1

penditure from the North East. If we assume that one-eighth of the raw materials comes from the area, and that two-thirds of the 'other' costs represent expenditure within the region, this, when added to wages and salaries, would mean that out of every £100 spent on construction in the North East, about £5 goes to profits, and almost £53 of the remaining £95 would also be disbursed in the region. Hence out of every £100 spent, for example, on housing in the area about £38 of income, 'before tax', would be generated in the area.

14.6. An attempt was made in the questionnaire to obtain some measure of the extent to which mechanisation in the industry, in the area, is labour saving. Respondents were asked to estimate how many extra men they would have required in mid-1967 had there been no new mechanisation in their firm in the previous five years. The total number returned was expressed as a percentage of the 1967 employment of firms answering the question, and subsequently reduced to an annual rate. The rate of saving on manpower per year worked out at 2.4%. So far as reliance can be placed on an estimate of this kind, it means that should output in the industry level off and the working week remain constant, and assuming the continuance of the same average rate of mechanisation as in 1962-67, employment in the sector of the industry covered by our respondents might be expected to fall by this percentage each year.

14.7. Firms were also asked to indicate what factors would tend to act as bottlenecks if all firms in the industry were trying to achieve a uniform increase in the value of work done by 1970, over 1967. The results are given in Table 14.3. It is obvious from this table that the major problem which firms anticipate in the event

of such expansion is whether they could obtain labour. It is interesting, however, that this problem appears to worry the large firms much less than medium-sized and smaller firms. Conversely finance appears to present greater problems to large firms than to others. Administration worries only medium and large firms, while concern about raw materials is evenly spread. Among the other difficulties mentioned are shortages of land, water and supervisory staff.

14.8. Firms were also asked about which aspects of Government policy have created problems for them of recent years. Of all the difficulties mentioned 44% were concerned with taxation. Closely linked with the complaints about taxation was the practice of tendering on a fixed price basis. For in many cases if a tax was changed after a tender had been accepted, the firm had to bear the increase. Tax changes plus fixed-price tendering accounted for over 50% of all complaints. The tax about which there were most complaints was the Selective Employment Tax; this accounted for 30% of all the difficulties mentioned, and complaints about it came from firms of all sizes.

14.9. After taxation the problem which was mentioned most often was devaluation, which raised the cost of imported raw materials, especially timber, as well as giving a general upward push to prices. It accounted for 13% of all complaints and the larger firms seemed most troubled by it. The cost and difficulty of getting credit on the other hand appeared to impinge most heavily upon the smaller firms and accounted for 8% of all the complaints. We, therefore, have the unusual situation of small firms having had difficulty in obtaining credit in the past; but as stated in paragraph 14.7 it is the large firms which expect to find this a bottleneck if the whole industry were to expand by 1970. The only other significant group of complaints were from large firms about the increase in the cost of National Insurance stamps, and from the medium firms about vehicle licences. Both difficulties accounted for over 4% of total complaints. A wide variety of other complaints were mentioned but without any one receiving significant support. On the whole they appear to be those which one would expect from the Construction industry nationally; there do not appear to be any significant local problems created by Government policy.

TABLE 14.3
Construction Questionnaire: Anticipated Bottlenecks
per cent of firms anticipating bottlenecks

Assumed percentage increase in the value of work done in 1970 over the 1967 level	Per cent of firms anticipating bottlenecks in:-				
	Labour (1)	Finance (2)	Administration (3)	Raw materials (4)	Other (5)
10% increase in ALL firms	64	12	8	12	12
25% increase in ALL firms	92	40	20	20	16

The Future Demand for Labour in Construction

14.10. The rate of growth of demand for labour in the Construction industry in the survey area has been given above as 20% between 1961 and 1966. If some part of this increase is attributed to a cyclical change in the level of economic activity in an upward direction between 1961 and 1966, the rate of growth declines marginally, to 19.5% for male employees in employment and to 16.6% for females. If these rates persisted unchanged until 1971 and 1976 the Construction industry in the North East would then have the number of employees shown in Table 14.4.

TABLE 14.4
*Construction Employment in 1971
and 1976: Projection of Past
Growth Rates*
thousands

	1966	1971	1976
Males .	15.5	18.5	22.1
Females .	0.7	0.8	0.9
Total .	16.3	19.3	23.0

The industry would therefore be providing 3,000 extra jobs by 1971 and 6,700 by 1976, over the 1966 level.

14.11. Continued growth at this rate seems, however, to be most unlikely in the future, for it would be contrary to present national trends. For Great Britain as a whole the number of employees in employment in this industry reached a peak in 1963, declined by 1.1% from 1965 to 1966, by 5.6% between 1966 and 1967 and by 2.1% between 1967 and 1968. The Scottish figure reached its peak a year later and declined by 4.6% between 1966 and 1967, the latest year for which there is information. Pre-

liminary figures for 1967 for the North East also show employment in Construction falling between 1966 and 1967 to 15,500. A large part of this is likely to be due to the reclassification of employees which has followed the introduction of S.E.T. If the same amount of reclassification occurred in the Construction industry in North-East Scotland as occurred for the industry in Great Britain, the 1966 regional figure should be revised downwards to 15,800. The real decline between 1966 and 1967 would then be of some 300 jobs, that is a rate of decline of 2%.

14.12. The information that exists about plans for expenditure on Construction in the area in the future also suggests a brake on the rate of growth of the Construction industry. The expected trends in public housing, private building and some new public building, covering, on the basis of our sample, about a third of all Construction expenditure, are all downward from a peak in 1967. These estimates must obviously be treated with caution; people are less willing to state clearly what their plans are the further off in the time to which they relate, so that in the end their estimates are likely to err on the low side. The view of the industry in the area is also less pessimistic than these estimates imply. The best guess in the face of conflicting views is that there may be only a slight change in employment up to 1970. What happens beyond that date is likely to be determined by action taken on the recommendations contained in this Report. If the recommendations are adopted, the outlook for the industry should again be bright, for it would have to meet some increase in demand for houses, factories and new roads, and employment could be expected to expand. However, in projecting employment in abstraction from policy changes of this kind we make the conservative estimate that up to 1970 male employment in the industry will decline by 500 from the 1967 figure, and that between 1970 and 1975 it will continue unchanged. These are the projections which were used in Chapter 8 in estimating future demand for labour in the North East on a sectoral basis.

Transport and Power

JOHN L. MARSHALL

15.1. This chapter will discuss the transport communications, both internal and external, of North-East Scotland, and will examine the provision of power within the region. Both of these groups of services are essential parts of the infrastructure of any region, and their adequate development is a necessary ingredient of any improvement of the development potential of our survey area. Efficient communications and transport are peculiarly important to it, because of its situation at some distance from major centres of population.

I. Communications and Transport

The Road Network

15.2. The road pattern of the North East has the twofold function of connecting together the various towns and villages of an extensive region, and of linking all parts of that region with the rest of the country. Both are vital to the future development of the area.

15.3. Consideration of the future of the road network of the North East has to be related to the situation in Scotland as a whole. The Government has recently produced proposals for the road programme throughout the 1970s. It was estimated that about £450 millions would be spent on new roads in the 1970s. A main object of the trunk road programme would be improvements to enable the most severely overloaded roads to be reconstructed. Serious overloading is not defined, but it is considered that on a cost benefit analysis the rate of return is unlikely to justify reconstructing a road until it is carrying at least twice the design capacity (i.e. the standard at which a new road is designed in order to provide a free flow of traffic).

15.4. The level of car ownership in the North East is much greater than in Scotland as a whole, and is about equal to the U.K. average. The major reason for this is certainly the rural character and extensiveness of the region. In this country, the level of car ownership is low in the large conurbations, and the difference between Aberdeen City and the rest of the region is in line with this. But in the variations between the North-Eastern counties one can discern the effect of income levels.

15.5. During the 1960s the level of traffic has been increasing at a rate of about 7% a year,

TABLE 15.1

North East: Proportion of Private Households by Number of Cars in 1966

Area	Percentage of total households with:—		
	No car	One car	Two or more cars
Aberdeen City . . .	68.7	33.0	3.3
Aberdeen County . . .	44.8	46.9	8.3
Barff	49.6	42.6	7.8
Kincairdine	43.1	48.1	8.7
Moray	50.1	43.6	6.2
Nairn	54.6	37.3	8.1
N.E. Region	55.9	40.1	5.9
Scotland	64.4	31.6	3.9
England and Wales . .	54.4	39.3	6.4
Britain	55.3	38.5	6.2

Source: 1966 Sample Census.

although the rate has been somewhat higher in Aberdeen City. Estimates of the future rate of increase depend on various factors such as the level of real income and the size of the population. Two projections were made of the future traffic volume, on alternative assumptions as to the growth rate. One projection assumed that the 7% rate of growth of the 1960s will continue down to 1975; the other assumed an 8% rate from 1965 to 1975. The projected rates were applied to the traffic flows recorded at just two points—those with the highest figures—on four major roads. These results are compared with the traffic predictions obtained from the standard national method.⁽¹⁾ Having regard to the fact that an overload of 100% is not unacceptable in that it does not greatly impede the free flow of traffic, it can be seen that the roads of the North East will be adequate to meet probable increases in traffic volume down to 1975.

15.6. This does not of course mean that things are perfect on the roads of the North East. The region's road network is physically no better—though no worse—than that of many other parts of the country. But it is relatively uncongested,

⁽¹⁾ For an account of the standard national method see *Advisory Manual on Traffic Prediction for Rural Roads* (H.M.S.O., 1968).

TABLE 15.2
Projections of Traffic Volumes, 1965-75: A92, A94, A96 and A98

Road	Census point	Traffic census figure p.c.u. per day ⁽¹⁾	Traffic in 1970 per cent of design capacity ⁽²⁾		Traffic in 1975 per cent of design capacity ⁽²⁾		Standard national method
			7% growth	8% growth	7% growth	8% growth	
A92 (T)	Cammachmore . .	8840	158	144	193	212	164
	Tarata	4429	69	72	88	106	62
A94	Miles of Lether . .	4794	86	91	120	134	104
	Redmyre	4743	85	90	118	133	103
A96 (T)	East of Elgin . .	6512	102	106	142	156	121
	Ten mile stone . .	6341	99	103	139	152	118
A98 (T)	West of Banff . .	4658	73	76	102	112	87
	Moray/Banff boundary	2714	42	44	59	65	50

⁽¹⁾ 'Passenger car units' per day. In the case of the A96, the estimates are based on figures from the 1963 census; all the others are based on the 1965 census.

⁽²⁾ 'Design capacity' is defined as 2,000 p.c.u. per day.

Source of census and standard national method predictions: S.D.D.

and this is an advantage for development in the immediate future.

15.7. There is, however, a number of places where the road network will be strained by the likely increase in traffic. The major trunk routes into, and through, the region pass through a number of towns, such as Buckshurn, Elgin, Inverurie, Huntly, Stonehaven and Laurencekirk, where there is a growing degree of congestion. Buckshurn's problems would be aggravated by the recommended development of Donside; indeed, as we recognise in Chapter 3 (para. 3.24) such developments would fairly soon involve expenditure on the A.96. In fact, the dualling of this road through Buckshurn has been agreed, and is scheduled for the early seventies. Later in the 1970s, as the development of Dyce gets under way, improvements to the road link between this village and the A.96 will also be made. If the development of Lower Donside progresses as we would hope, it may be necessary to take action at Inverurie and Kintore, to by-pass these burghs. Huntly is also a serious bottleneck on the route between Aberdeen and Elgin, and although there are plans to deal with this by a system of one-way streets, a by-pass may ultimately be required. We have recognised that our proposals for the Elgin area will increase the congestion within that town and, as mentioned earlier, an inner relief road has been approved for the early seventies. One other major development on the A.96 will be the construction of a new bridge over the Spey at Fochabers; work on this is due to start almost immediately.

15.8. The problems of Aberdeen City are clearly different in character from those of the rest of the North East, but they cannot be completely detached from the regional transport situation as a whole. The volume and circulation of traffic within the City will be strongly influenced by developments in the region at large; while they in turn can react on these

developments since, at present, southbound traffic originating to the north of the City must—practically speaking—pass through it. The level of car ownership in Aberdeen is less than in the rest of the region, but this may simply mean that the already higher rate of growth of traffic in the City will be maintained and may even accelerate. In any event, as we have seen, the location of future developments within the Aberdeen City region will influence the need for roads. Currently, traffic does not warrant the building of an outer ring road, but if there are to be major developments in the Don Valley, at Inverurie, Kintore and Dyce, then it will eventually become necessary to build an outer ring road, to link the A.92 and the A.96. The present ring road offers a good route to through traffic, keeping it well away from the City centre. For the immediate future this will meet the need; and with improvements already planned, it will be able to accommodate an increased flow. But the scope for such expansion has its limits.

15.9. On the A.92 south of Aberdeen further dualling of the stretch between the City and Stonehaven is provided for in the 1970s. Later in the seventies a Stonehaven by-pass may be built; it will certainly be needed by then, as may well be a by-pass at Laurencekirk.

15.10. One matter on which an early decision should be taken is the trunking of the A.94 between Stonehaven and Perth. The position at present is that a final decision has been deferred until the publication of the Tayside Survey. Our own survey of hauliers in the North East, as well as one undertaken by the North-East Consultative Group among industrialists, indicates widespread support for reversing the status of the A.92 and the A.94. It may well be that the future development of Tayside would eventually merit the retention of trunk status for the A.92; but at the present time, and for the foreseeable future, the strongest interests of the North East clearly lie in the maximum possible

improvement of the A.94. The major bottleneck on this route, the Upper North Water Bridge, is just outside our region; its replacement, which has been agreed to, will be highly beneficial to the communications of the North East.

15.11. A proposal of a different kind is the long-standing campaign for a new road through Glen Feshie. This road, which would cost at least £2 millions to construct, and which would connect Upper Deeside with the Great Glen, has been argued for on the grounds that it would allow the movement of North-East timber to the Fort William pulp mill; that it would help the fishing industry by facilitating the movement of west coast fish to Aberdeen; and finally, that it would benefit the tourist industry. Only the last of these arguments has any substance, but like all questions involving the improvement of tourist facilities, its projected benefits are difficult to quantify. It would certainly help to increase the already expanding winter sports activities of the area by making it possible to move quickly from one side of the Cairngorms to the other. It would probably also increase the volume of summer tourism throughout the North East by providing an attractive touring circuit between west and east. However, it is significant that the Highlands and Islands Development Board, which has a clear interest in such a project, has not dissented from the suggestion of the Highland Transport Board that the improvement of existing roads should take precedence over the building of new roads such as the Glen Feshie road. This is a view which we endorse.

The Road Haulage industry

15.12. The Road haulage industry within the region has an interesting structure which calls for some comment. There is a number of very large operators which, while undertaking a certain amount of purely local business, are mainly engaged in the long-distance carriage of freight into and out of the region. The medium-sized concerns tend to concentrate to a greater extent upon purely local work, although they do also engage in longer-distance work. The small firms, of whom there are many, basically serve a limited area and do not normally engage in long-distance work.

15.13. A questionnaire was sent to some 120 hauliers who included all the large and medium-sized firms, and a selection of the smaller businesses. The questionnaire was designed to discover information about various aspects of the respondents' activities. They were asked what were the present and likely future scale of their activities; what their levels of charges were; whether there were any differences in their charges for freight coming into and going out of the survey area; which road improvements would be of most benefit to them. Altogether, 49 firms replied to the questionnaire. As these included most of the large companies, the replies may have been unrepresentative of the industry. On the other hand, to the extent that this was so the replies were biased towards those firms which are most important for the prosperity of the area. Some of the results of the question-

naire will be mentioned in the next two paragraphs. The recommendations made earlier about the road-building programme take into account the views of the respondents to the Enquiry, although clearly these were not the only factors which were borne in mind.

15.14. The future of the Road haulage industry in the North East is affected by some uncertainty. One source of this is the 1968 Transport Act, and in particular the possible effects of the quantity licensing provisions. Under these, the operators of goods vehicles of over 16 tons gross weight will have to apply for licences if they wish to transport any goods more than 100 miles and certain specified bulk materials (e.g. coal, various extracted materials and iron and steel) over any distance. The only exemptions from these provisions are the carriage of livestock, household furniture removals, the movement of goods within and between off-shore islands which have no rail connection with the mainland and the transport of roundwood. Although some of the exemptions are clearly in the interest of the North East, these provisions of the Act may have adverse effects on the region.

15.15. Both our Enquiry and an investigation carried out on behalf of the North-East Consultative Group indicated that many firms would be affected by these provisions of the Act. The questionnaire sent to hauliers indicated that some 40% of the freight they carried originated outside the region or was being sent outwith it. Because of the distances between the North East and the centres of industry and population to the south virtually all the goods transported into or out of the area will be subject to the quantity licensing provisions. These provisions may have some direct effects on the cost of transporting goods to and from the region; but their indirect effects on the flexibility of Road haulage operations may be more significant in the long run. It is important that there should be a continuous surveillance of the consequences of the Act for regions such as the North East.

15.16. Another source of uncertainty is the eventual effect of the liner train service. The projected National Freight Corporation may be more successful than British Rail in persuading industrialists to use this. On the other hand, it has been suggested that "the charges British Rail will be making for providing and hauling the Corporation's freight liner trains . . . might conceivably lead to a raising of freight liner charges".⁽¹⁾ This uncertainty affects all road hauliers, even those who do not compete directly with the liner trains. If there is an upsurge in the volume of freight carried by the liner trains, this could have the result of forcing some of the long-distance hauliers to concentrate more on moving freight over shorter distances. However, it is notable that, despite all the uncertainties, those hauliers who responded to our questionnaire expect that there will be an increase in the number of people employed in their industry by the mid-1970s.

⁽¹⁾ *Financial Times*, 11th November, 1968.

15.17. Although many of the hauliers in the region charge their customers the rates suggested by the Road Haulage Association, a number differentiate between loads taken from the region and loads brought in. In nearly all these cases, the charges for loads brought in—the back-loads—are the lower ones. This differentiation is tied up with an overall imbalance in the volume of goods carried into and out of the region. The precise effects of the situation are difficult to judge, but, *a priori*, one would expect that the existence of the imbalance would tend to raise the average level of transport costs to and from the region, though such higher costs may not necessarily be passed on completely to the transport users. However, the lower cost of back-loads operates to the advantage of some of the region's industries—some food processors, for example—enabling them to import raw materials and other supplies at a lower cost than they could otherwise expect to do; but just who pays for this, as someone must, it is not possible to determine.

Rail Services

15.18. The railway network of the region has been greatly reduced in recent years: it is now, effectively, stripped down to the two major links between Aberdeen and the south and Aberdeen and Inverness. The importance of the latter route has been recognised by its inclusion in the list of loss-making lines which are to receive Government grants towards their running costs.

15.19. Clearly, both lines are important to the maintenance and development of the economy of the North East; but of the two, the link with the south of Scotland and England occupies a special position. Here it is clear that some of the earlier misgivings over the closing of the Strathmore line were unfounded. At least, the routing of all trains through Dundee has not obstructed the recent marked speeding up of the links with Glasgow and Edinburgh, while it has, of course, improved the service to Dundee and Tayside.

15.20. Rail connections between Aberdeen and the south are generally good and constitute a positive advantage to the City and the region. The Tothill Report on the Scottish economy emphasized the need for adequate sleeper services between Scotland and England to meet the need of industrialists, and in this connection it may be noted that a survey of the sleeper service between Aberdeen and London during 1967 found that the berths, particularly first-class berths were not fully utilised.

15.21. But the most potent development in rail links with the south has been the establishment of Aberdeen as a liner train centre in 1966. This is most important for the attractiveness of the area to incoming firms. This service connects Aberdeen with London and Southampton; but there is also a feeder service from Aberdeen to Glasgow, inaugurated in 1967 and designed to move containers between Aberdeen and English cities like Manchester, Birmingham and Sheffield, which are not served by the main link. This feeder service will be expanded to connect with Liverpool in 1969 and South Wales in

1970. The Aberdeen-London service is now running at between 50 and 60% of capacity. The feeder service between Glasgow and Aberdeen has not been so successful due to difficulties at the Glasgow depot. Once these have been overcome it is hoped that this service will be more fully utilised.

15.22. The other main rail link of the North East is the line from Aberdeen to Inverness, via Inverurie, Keith and Elgin. This has an important internal function in facilitating communications within the region. It also has a part to play in the kind of developments projected for the Don Valley, and the Elgin area, in this Report. In this connection the position of Inverurie station is of some significance. Originally on the Beeching list for closure, the Railway Board did not proceed with this proposal when other closures with which it was linked were resubmitted in 1967. Any decision about the future of Inverurie station must take account of its potential importance for suburban passenger traffic. It is true that at present only sixty or so people travel daily to work, by train, from Inverurie to Aberdeen. But the proposals contained elsewhere in this Report, if implemented could result in an increase in the number of daily commuters. Also the importance of Inverurie as a freight-loading point in relation to present and future industrial development should be kept in view.

15.23. One other rail link now closed, calls for comment. The Deeside line was closed in 1966, but at the time the Railway Board were instructed to retain the track and formation. It may be said that the line was relatively unimportant for freight and existed largely for passenger travel. As such, and leaving aside the upper reaches of the valley, it did provide a commuter service for the Deeside residential areas. Any case for re-opening the line would have to rest heavily on the developing traffic situation in Aberdeen and the possibility of this proving intractable to other measures. The pattern of future development for the Aberdeen City region proposed in this Report would, in itself, add only marginally to the traffic problems on the Deeside arteries, though these problems are far from inconsiderable and any general success in promoting development would certainly add to them. Unless there were much larger developments at Banchory than we envisage, the potential population increase on Deeside would not in our view alter the viability of the Deeside line.

Air Services

15.24. In Dyce Airport, and air services from it, the North East has a major communications asset, which adds quite measurably to the attractiveness of the region to incoming industry. The maintenance and, when possible, extension of the air links which it provides are vital to the development of the region. It should also be noted that the north-western part of the region has ready access to Dalross, the airport for Inverness. Indeed it is a signal advantage of Elgin and its surrounding burghs that they are within the Dalross catchment area. The flights

from Dyce and Dalroch provide for daily travel between the North East and London, Glasgow, Edinburgh, Manchester, Birmingham and Belfast. In all these cases it is possible to make a return journey within the same day. At the present time these services are under-utilised, although there has been a marked increase in the numbers of passengers carried, with a slower increase in the volume of air freight. The 'hus stop' service between Aberdeen and the south of England, announced to start in 1969, will greatly increase the range of possible flights and connections, and if successful will be a substantial asset to the region. Dyce, which is also of course an important link with the Northern Isles, is expected to be able to cope with the growth of traffic in the foreseeable future. It can also take larger aircraft, including Trident, than the Viscounts at present in service.

Ports

15.25. There is a number of harbours in the North East through which goods are shipped into and out of the region. Several of the smaller ones such as Buckie, Fraserburgh, Lossiemouth, Macduff and Peterhead retain a local importance in the shipment of bulk commodities like coal

and grain. But only Aberdeen is of really major importance as a port. The volume of trade through this port over the last decade is shown in Table 15.5.

15.26. With the exception of coastwise exports the trend of shipments has been upwards, though there have been quite large fluctuations from year to year in some types of movement. The decline in coastwise exports is the result of increasing competition from road transport. But imports, both coastwise and foreign, have risen. Fish accounts for a large proportion of the foreign imports here, while bulk commodities like fertilisers, petroleum products and coal are prominent in coastwise imports. The only regular coastal route from Aberdeen is that to Orkney and Shetland; the port is the major link with the islands.

15.27. A survey in 1963⁽¹⁾ suggested that the level of trade through the port of Aberdeen would increase slowly, and the general trend of movements before and after that year certainly supports that conclusion. There is possible scope for developing the routes between Aberdeen and Scandinavian ports. A car ferry has been

⁽¹⁾ By the Economist Intelligence Unit.

TABLE 15.3
Dyce Airport: Numbers of Passenger Movements, 1960-67

	1960-61	1963-64	1964-65	1965-66	1966-67
To and from the north and the Islands . . .	21,444	18,189	17,594	20,358	25,136
To and from points south of Aberdeen . . .	18,594	37,717	46,905	52,885	59,788

Source: B.E.A.

TABLE 15.4
Dyce Airport: Volume of Freight Handled, 1960-67
kilotons

	1960-61	1963-64	1964-65	1965-66	1966-67
To and from points north	291,681	980,265	293,755	243,167	192,790
To and from points south	58,757	46,180	74,605	99,153	147,102

Source: B.E.A.

TABLE 15.5
Volume of Trade through Aberdeen Harbour
thousand tons

Year	Imports		Exports		Total movements
	Coastwise	Foreign	Coastwise	Foreign	
1966-67	745.9	268.8	327.8	18.6	1,361.1
1960-61	779.4	313.4	155.5	21.3	1,269.6
1966-67	812.5	369.6	112.5	80.9	1,395.5

Source: Aberdeen Harbour Board.

mooted; the advantage here is that Aberdeen offers the shortest sea crossing. For cargo there is the advantage of lack of congestion in the port, and though the land haul to and from the City is a long one, with improved rail freight facilities it may be possible for Aberdeen to attract some of the growing trade with the Scandinavian members of E.F.T.A. This possibility would certainly bear further examination by the Harbour Board in conjunction with British Rail.

15.28. Developments in the harbour area of Aberdeen have suffered in the past from the division of responsibilities between the Board and the Town. The Board has tried, unsuccessfully, to purchase land from the Town Council for industrial development. But the whole question of development in the harbour area, including the rebuilding of the fish market which is a major use of land on the quayside, cannot be divorced from the planning of the central area of the City; and the division of responsibility is likely, as in the case of local authority boundaries, to obstruct rational planning. It is possible that the inability of the Board to provide a site near the harbour might deter a firm wishing to establish itself in the port. On the other hand, industrial activities of any kind generate traffic and other planning problems with which the Town has to cope. But apart from the need to harmonise policies, it does appear that a careful scrutiny of land use in the whole harbour area is called for. In view of the shortage of space around the quays, a study should be made of the needs of, and justification for, all existing uses of land.

Public Transport

15.29. Travel-to-work journeys in the North East tend to be short; this has been confirmed to us by information from a number of partial sources—employment exchange data, a census of bus journeys on certain routes, and a small sample check on some other routes undertaken for this survey.¹²³ At the same time, as we have stressed earlier, it is vital to increase the extent and efficiency of local labour markets in the region. For this purpose the maintenance of adequate public transport between the places within single labour catchment areas—both in our two designated areas of growth and elsewhere—is vital. This largely means good bus services, though rail services have a certain importance on one or two routes, such as Aberdeen to Inverurie.

15.30. The two main operators of bus services in the region are the Aberdeen City Transport Department and W. Alexander & Sons (Northern) Ltd. The latter, a member of the Scottish Bus Group, operates over a somewhat wider field than our survey area, but is responsible for the great majority of services outside Aberdeen City. Both operators have suffered a slow erosion in numbers of passengers carried. One of the ways in which the City is meeting its problems is by the introduction of single-manning on certain routes.

15.31. Alexanders' problems are intensified by the widely-scattered population which it serves with a consequent under-utilisation of capacity; and the experiments in East Lothian

TABLE 15.6
*Aberdeen Transport Department:
No. of Passengers Carried,
1959-68
thousands*

Year	No.
1959-60	95,836
1964-65	81,638
1967-68	75,940

to combine bus services with, for example, G.P.O. services, are very relevant to conditions in parts of the North East. The closure of certain rail routes has been conditional on Alexanders running convenient buses, the services being subsidised by the Scottish Transport Group. Following the Transport Act the continued subsidisation of other rural bus services will be a matter for local authority decision and finance. It is important that the labour market development considerations already mentioned should be kept squarely before all the decision-making authorities.

II. Gas and Electricity

15.32. The provision of power of all kinds on an adequate scale is essential for the attraction of new industry. In earlier times the availability of sources of power determined the location of certain industries. But with the advent of electrical power, and its provision through a national grid, power as such ceased to have such a determining influence. It is well known that this has reduced the relative attractiveness of certain locations and allowed other forces to influence location decisions. Nevertheless, it is still important that there should be an adequate central provision of power for any region which aims to maintain and increase its industrial base.

15.33. In this chapter discussion is limited to the gas and electricity industries. Although oil is of increasing importance, there are various reasons for omitting any discussion of it. It does not suffer from the supply constraints which affect both the electricity and gas industries. Also, information about the prices negotiated between oil companies and industrial users is not readily available. The other major fuel is, of course, coal, and this is of declining importance. There are no physical constraints on the supply of coal to the North East, but the fact that the price of coal is relatively high in Scotland, because of high production costs, is a disincentive to its use.

Gas

15.34. Consumption of gas within the survey area has increased in recent years in line with the national trend, and the Scottish Gas Board

¹²³ The information on bus journeys was kindly made available to us by W. Alexander & Sons (Northern) Ltd., who also gave us facilities to conduct our own sample check on some of their routes.

believes that this expansion will continue. The National Plan estimated that the consumption of gas within Britain would increase by 71% per annum between 1964 and 1970. This compared with an annual rate of growth of 3.4% between 1960 and 1964 and virtual stagnation in the later 1950s. From estimates provided by the Scottish Gas Board, it is clear that the Board adheres to the Plan figure as far as the North East is concerned, since it is expecting a 36% growth in consumption between 1966 and 1970.

TABLE 15.7
*Consumption of Gas Within
the Survey Area
thousand therms*

Year	Consumption
1960	12,108
1963	11,638
1966	12,925
1970 (estimate)	17,583
1975 (estimate)	24,714

Source: Scottish Gas Board.

inter-connection of the Aberdeen and Inverness systems to form a regional grid would be advantageous in increasing the security of supply within the North East. If the region as a whole is to benefit further from the technical economies of scale, and also if the supply of natural gas from the North Sea is plentiful, it may become necessary to complete the link with the Central Scottish Grid. Clearly the Gas Board will have to weigh the costs of the connecting mains and transmission losses against the gains in production costs. But regional considerations should also be given weight: an expanding and secure supply of fuel is essential to the North East.

15.37. The cost of gas to all classes of consumers in the North East is, as in Scotland as a whole, high by national comparisons. In fact, of the other eleven area boards only one has a higher domestic tariff, and only three charge commercial users more. In Table 15.8 figures for Scotland, Great Britain and two of the English board areas are given, to show the relative position. The reasons for the higher price of gas in Scotland are varied, but include higher coal prices and the much more extensive area over which the Board's consumers are

TABLE 15.8
*Income from Gas Sales by Selected Regions, 1966-67
pence per therm sold*

Category of consumer	Scottish Region	N. Thames Region	E. Midlands Region	National average
Domestic . .	31-33	26-08	21-24	25-49
Industrial . .	19-08	18-99	15-68	16-02
Public Admin. .	26-49	20-17	17-80	20-44
Commercial .	27-63	21-88	19-08	22-16
Average . .	27-01	24-26	18-27	22-74

Source: Annual Report of the Gas Council for 1966-67.

15.35. In the North East, the Board has followed a policy of closing small, uneconomic gasworks and concentrating production for the region in the Inverness and Aberdeen plants. It is expected that between 1960 and 1970, thirteen small gasworks will have been closed in the area. Although this policy may have added marginally to the employment problems of the towns affected by the closures, it is clearly in the interests of the region as a whole.

15.36. The Board anticipates no shortage of production capacity in the region. It has plans for expanding the capacity of its plant at Inverness, and its Aberdeen plant is also capable of further expansion. The two plants are not yet interconnected: Inverness supplies gas to all the northern part of our region and as far east as Huntly, Banff and Turriff. Aberdeen supplies it as far north as Fraserburgh and Peterhead, to Inverurie and Banchory and south to Stonehaven. In the south of the region Laurencekirk and Inverbervie are served by mains which connect up with the Central Scottish Grid. The

scattered. These higher prices are hardly an addition to the attractiveness of the North East, or of Scotland as a whole; but at least in the case of our region, there is some slight compensation in a lower level of electricity charges.

15.38. Finally, there appear to be no significant constraints on the supply of gas within the region. All the burghs are served from one or other of the two production points and supplies can be increased to any place where industrial growth is at all likely.

Electricity

15.39. Electricity is provided throughout the survey area by the North of Scotland Hydro-Electric Board. As the total area served by the Hydro Board extends far beyond the bounds of the North East, all the information about the operations of the Board within the region has been given by the Board. The future of the Board and of hydro-electricity were the centre of controversy after the publication of the

Report of the Mackenzie Committee in 1962. The Committee suggested, *inter alia*, that the North Board should be merged with the South of Scotland Electricity Board, and it cast doubt on the viability of conventional hydro schemes. In 1963 the Secretary of State announced that the two Boards would continue to enjoy a separate existence, but that there would be increasing collaboration between them. The Chairman of each Board is now a member of the other, and the two Boards seek jointly to provide for likely future demand for electricity within their areas. Such a procedure enables them to enjoy the economies of scale to a greater extent than would be possible in the absence of co-operation.

15.40. Neither of the next two major projects of the Boards will be built within the North-East region. These are the advanced gas-cooled nuclear generating station now building at Hunterston 'B', and the proposed 300MW pumped storage scheme at Foyers which is planned to come into operation in 1974. But the North Board is currently examining the possibility of building a nuclear station on the North-East coast. This would not influence the supply position until possibly the later 1970s, but in any case the provision now being made by the two Boards, and their co-operation in supply, will ensure an adequate supply of electricity in the North East.

15.41. In 1965-66 the Hydro Board sold a total of 1,180 million kilowatts in the survey area.⁽¹⁾ It estimates that its sales will rise to 1,636 millions by 1969-70, and to 2,480 millions

by 1974-5. It is expected that the Board will become a net importer of electricity from the south by the mid-seventies, though, owing to the pattern of production, it will still be supplying some power to the South of Scotland Board.

15.42. The Board has to carry on certain activities which are commercially unremunerative. For example, it has estimated that its loss from the provision of electricity to rural consumers—by no means confined to the North East—is of the order of £2 millions. It was recently refused permission to convert the Carolina Port power station completely to oil-firing, although this change could have resulted in 'substantial savings'. Partly to counteract these burdens, the Government has so far accepted that the Board should earn a lower rate of return on its capital than the other electricity boards.

15.43. Table 15.9 gives some indication of how the North of Scotland Board's industrial tariffs compare with those of other boards. The Board's charges are placed alongside the average levels of all boards, as well as those of the South of Scotland Board. It may be said that a detailed breakdown would show that the comparison with average figures is not misleading: the North of Scotland Board's tariffs are generally lower than most other boards', though there is a small number of cases where, at particular points on their scales, certain other boards charge less. But this statement applies to the costs to comparable users. On average, industrial users in the Hydro Board's area actually pay more per unit of electricity than the average for the country as a whole, but this is due entirely to the pattern of the demand in the North of Scotland. The average industrial user operates on a scale below the comparable national average, and this puts up the *realised* average cost of electricity in the region.

TABLE 15.9
Electricity: Comparison of Industrial Tariffs⁽¹⁾

Load	Load factor	North of Scotland H.E.B. £ per annum	South of Scotland E.B. £ per annum	Average of all boards £ per annum
M.V., 250 KW @ 0.9 p.f.	30%	5,738	5,723	5,926
	40%	6,360	6,648	6,815
	50%	7,381	7,598	7,688
H.V., 1,000 KW @ 0.9 p.f.	30%	20,938	21,301	22,186
	40%	24,060	25,011	25,540
	50%	27,162	28,624	28,824
H.V., 5,000 KW @ 0.9 p.f.	30%	96,908	106,600	108,592
	40%	112,500	119,961	125,071
	50%	128,013	153,922	141,140

- ⁽¹⁾ (i) M.V., or medium voltage, is 415 volts.
(ii) H.V., or high voltage, is either 6,600 volts or 11,000 volts, but mainly the latter.
(iii) The number of kilowatts refers to the maximum demand in any half-hour.
(iv) The p.f., or power factor, is the ratio of the useful supply used to the total power. If the p.f. falls below 0.9, a penalty is imposed to encourage firms to increase their power factor.
(v) The load factor refers to the amount of time the equipment is used, e.g. a factory with a 50% load factor is using electricity for 12 hours of the day.

Source: North of Scotland Hydro-Electric Board.

Conclusions

15.44. The respondents to the Manufacturing questionnaire put transport at the top of the list of difficulties of operating in the North East. Clearly good communications and transport services are vital to the region and their improvement must be a constant concern with the local planning authorities of the North East and with the central authorities. This is particularly so in regard to roads which, while relatively uncongested and operating well within their design capacity, are only partially suited to modern traffic needs. Our inquiries suggest that although the North East may suffer certain cost disadvan-

tages in relation to transport, actual transport services are more than adequate, and can accommodate further growth of traffic within existing capacity.

15.45. In the provision of power there appears to be adequate capacity in both the gas and electricity industries to cope with growing demand in the North East, and there are no significant supply constraints within the region. The higher prices for gas are an unfavourable factor, but this is partly compensated by the lower cost of electricity. It will be to the advantage of the region if, eventually, it is connected to the Central Scottish Gas Grid.

APPENDIX A

Planning Factors

Estimates of Population to be Rehoused and Relocated, 1966-76

This note describes how the totals of population likely to need rehousing, and therefore possibly available for relocation, by 1976, have been estimated. The figures concerned are those given in Table 2.4 and para. A3.2 (in the Appendix to Chapter 5). We deal first with the calculation for Aberdeen City; proceed to that for the rest of the North East; and finally make some comments on the population assumption adopted.

Aberdeen City

To begin with we assume here that we have to find space within the City region for population displaced from the City as defined by the 1966 boundaries. We take as the base figure the population living in private households in 1966 and we assume that the displacement, spread over the period 1966-76, takes place from a population of this size. Such displacement has two components, one due to redevelopment and rehabilitation, and the other to the increase in the number of separate households. The first component is calculated on the assumption that in the seven years 1970-76, there is an annual redevelopment of 500 sub-standard houses, half of which are entirely replaced with a 50% loss of accommodation, and the other half rehabilitated with a 25% loss. The loss of accommodation consequent on the redevelopment of 3,500 houses over the seven years, would be equivalent to 1,800 houses. If we now apply to this an occupancy rate of 2.85, which is a projection arrived at by assuming that the decline during 1966-76 will be at half the rate of the period 1961-66, this gives a displacement figure of 5,700 people.

The second component of displacement arises from the projected increase in the number of households. Here we assume a base population in private households of 175,780, living in 60,200 households at a rate of 3.04 persons per household (these are the 1966 figures). Next we make the conservative assumption that the average number of persons per household in the City will decline to 2.80 by 1976: this is approximately half the rate of decline during 1961-66. From these figures we now calculate the number of households which will have arisen in 1976 from a population equal to that of 1966. The number is 62,770, an increase of 2,570 over 1966. We now convert this into a population figure, and arrive at a total of 7,300 people as belonging to households newly formed between 1966-76 from a population equal in total size to the 1966 City population.

The County Areas

As was said in the text, we have no data to guide us on the extent of redevelopment and rehabilitation of houses in the five counties of the North East. There is undoubtedly some sub-standard housing which will have to be rehabilitated or replaced; but much of this will be within existing hurghs and the population concerned may have to be housed in and around these places. Such population will not be available for concentration in the two zones of development which we have recommended. We concern ourselves here, therefore, solely with population displaced as a result of changes in average household size.

We have been given some projections of changes in average household sizes for the region as a whole,

as well as for Aberdeen City, up to 1976. What we have done is to carry out exactly the same calculation as was described above in connection with Aberdeen City. We assume that the private household population for the region as a whole will remain unchanged between 1966 and 1976: this is a highly optimistic assumption on which we comment later in this note. The average household size in the North East, in 1966, was 3.03, and it is estimated by the S.D.D. that this may fall to 2.95 in 1976, though the uncertainty surrounding this projection is emphasized. If we apply the figure of 2.95 to the total regional population in private households in 1966 (a figure of 426,600) on the assumption—to be reconsidered later—that the 1976 population, total and in private households, will be the same as in 1966, we arrive at a projected number of households in that year of 144,600. This represents an increase of 6,600 households over the 1966 figure, and involves a total of 19,300 people. If we deduct from this the figure arrived at above for Aberdeen City (7,300) we are left with a total of 12,000, as the number of people living in the county areas of the North East who will be involved in new household formation. It will be noticed that the method of calculating this takes account of the difference in average household size between Aberdeen City and the rest of the North East. In the text we took half of this figure as representing the potentially mobile component of displaced population available for relocation in the areas of concentration. This was entirely arbitrary. But it is clear that development, which is bound to proceed in other, existing, places in the region, will absorb some of the mobile population of the North East.

The Population Assumption

In the calculation made here of the potential displacement of population due to housing rehabilitation and the increase in the number of households, it has been assumed that the total population of the region would be the same in 1976 as in 1966 (with the same proportion living in private households). This assumption is at variance with the objective of stabilising the regional population by the mid-seventies which we propose as realistic. If this objective is achieved the total population will still be 8-10,000 lower in 1976 than in 1966.

It may be argued that the prospect of continuing decline does not detract from making this assumption in the calculation of potential displacement from Aberdeen City. The population of the City region may well continue to grow, as it has done in recent years, in the face of a decline in the regional population. The assumption is also justified by our view that, in regional planning, the greater emphasis should be placed on the Lower Donside growth area in the immediate future.

In the county areas the assumption of a constant population is clearly over-optimistic. The justification for adopting it is that it allows us to place an upper limit on the number of people likely to need rehousing and relocation within the survey period. Even with this assumption the regional total might not reach the figure of 26,000 used to test the physical capacities of the areas selected for concentrated growth. But as we argue in the text (in para. A3.5), it is useful to test these capacities by a figure somewhat in excess of the likely number available for relocation, since this allows a margin for further growth in the selected areas, beyond the mid-seventies.

Population

I. A 'Healthy' Population

It is difficult to describe one population structure as 'healthy' and another as 'unhealthy' in terms of an ideal demographic balance, since such terms depend on the particular sets of objectives which regional policy is aiming to achieve. For example, a population could be thought of as unhealthy if the proportion of old people was such as to impose severe strain on existing resources, through welfare services. The health of a population structure could also be defined in terms of whether or not the population was maintaining its size over a generation or so. In any case, over a period of ten years, the structure of a population is rarely likely to change sufficiently for noticeable differences to occur. It is thus only possible to compare the population structure of the region with that for the rest of the country, to ascertain whether or not it is significantly different. Other definitions would have little meaning. This is particularly so at present, since the structure of most regions could be regarded as unbalanced, owing to the bulge in births at the end of the war.

Thus, if we consider the population structure of Great Britain, we notice that there are more men than women at all ages to age 50, and thereafter the proportion of men declines relatively until age 60. This is partly because more males are born, and partly because of their higher early death rate.

If we now consider the age structure of Scotland as a whole and compare it with that of Great Britain, we notice that there are relatively more young people in Scotland up to the age of 20, only slightly more aged 25-30, and thereafter consistently fewer. There are relatively more young men in Scotland up to the age of 20 compared with Great Britain, and—probably due to migration losses—fewer between the ages of 20 and 60. The comparison of the Scottish age structure of females with that of Great Britain shows that there are relatively more of them in Scotland up to the age of 35; there is then a relative decline which becomes more and more marked. A comparison of the sex structures of the Scottish and British males in the population reveals the general similarity of pattern: there are fewer females per male up to the age of 45, after which the proportion of females to males increases progressively.

When we compare the age structure of North-East Scotland with that of Great Britain, there is little difference, and we can regard the age structure of the North East in this respect as 'healthy'. Proportionately, there are more young people in the North East between the ages of 5 and 20; slightly fewer between 20 and 30 and fewer again between 35 and 55; in the North East 24% of the population is between the age of 35 and 55, whereas the corresponding ratio for Great Britain is 26%. The older population compares well, the percentage of people aged over 55 being almost identical. On the other hand, an analysis of the age structure of the North East, of males and females separately, compares somewhat less favourably with the similar analysis for Great Britain. Not only are there relatively fewer males in the North East between the age of 20 and 30, there are also fewer males between the age of 35 and 55 (24.5% in North-East Scotland and 26.2% in Great Britain). There are more males in the North East between the age of 30 and 35, and again over the age of 55 than in Great Britain.

When comparing the age structure of the female population of the North East with that of Great

Britain, we notice that there are proportionately more females between the age of 5 and 20 in the North East, fewer between the age of 20 and 30, more between the age of 30 and 35, and then fewer between the age of 35 and 55.

TABLE B.1
*Population Structure of Great Britain,
Scotland and
N.E. Scotland, in 1966*

Age groups	Great Britain per cent of total	Scotland per cent of total	North East ⁽²⁾ per cent of total
0-4	8.6	9.2	8.4
5-9	7.7	8.6	8.1
10-14	7.0	7.9	7.9
15-19	7.8	8.0	8.2
20-24	6.6	6.3	6.2
25-29	6.0	6.1	5.8
30-34	5.9	6.0	6.3
35-39	6.3	6.2	6.0
40-44	6.7	6.4	6.3
45-49	6.3	6.0	5.7
50-54	6.6	6.4	6.2
55-59	6.4	6.2	6.6
60-64	5.7	5.5	5.9
65-69	4.6	4.3	4.6
70-74	3.4	3.1	3.4
75+	4.4	3.8	4.4
Total	100.0	100.0	100.0

⁽²⁾ These figures differ from those in Table 7.16, p. 56, since they are based on resident, rather than total, population.

We must thus conclude that the population structure of the North East, compared with that of Great Britain as a whole, is relatively healthy (though a more detailed comparison between the North East and Scotland shows a rather erratic population structure in the North East).

II. Methods Used in the Population Projections of Chapter 7

Since the purpose of the projections presented in the main Report was to investigate the likely effect on the population structure of the region of a change in the current size and composition of the region's migration loss, the assumptions made for each projection were left as similar as possible in order to highlight the effect of changing patterns of migration loss. It must be appreciated that there are a large number of factors that influence the population structure of a region, and that a change in one of these factors is bound to have repercussions on many of the others, as well as on the overall resulting population structure. Thus, to assume that the (highly complex) inter-relationship between these demographic factors is relatively simple, and that a change in one will produce little change in the others, may over-simplify the results in such a way as to render them unrealistic. However, this may be useful if the intention is to highlight some of the more important relationships. For example, this Report has assumed that a changing population structure will have no influence on the age-specific

⁽¹⁾ With the exception of Part IV this Appendix has been prepared by Mr. G. Popplestone.

marriage rates of the region and thus, that an increasing rate of migration loss resulting in a smaller proportion of men aged 20-35, and a change in the male/female ratios for this age group, will not affect the proportion of marriages in this age group, or the number of children born. This is of course not a realistic assumption, but the analysis has the advantage of not confusing the relationship between migration and age structure with the addition of more complicated assumptions about marriage rates that must of necessity be made arbitrarily.

This appendix describes the methods used in projecting the population so that the reader may appreciate the complicating factors that have been deliberately omitted from the exercise, and thereby make some estimate of the biases introduced.

The population was projected by five-year age groups, for periods of five years, since projections computed annually were found to produce misleading cyclical fluctuations.

The oldest population in the age groups (that is, people aged 75 and over) were left in their age group since the increasing death rate kept the age of the group in reasonable accord with reality. The death rate of children up to the age of five is much more difficult to compute since it is high in the early part of the first year of life and thereafter decreases considerably. One way of coping with this complication is to assume that all children have the same 'chance' of dying as the mean death rate for children aged two and a half years old. This is particularly crude in the light of the pattern of death rates between birth and five years, since the death rate in the first few months of life falls very rapidly, and thereafter begins to increase very slowly.

The broad procedure used in the projections was to convert the age structure of the resident population, divided into five-year age groups, into the equivalent age structure of a total population. Total population was used in preference to resident population, since the former includes members of the Armed Forces, students and others living temporarily away from home.

Future births were estimated first of all, and thus calculated (see below) on the total population of females derived from the population structure of the previous five years, were upgraded by five years. In other words, the births were estimated on the basis of the result of the previous five-year projection exercise. Once the births were estimated, each of the five-year age groups was decreased by the number of people of that age assumed to die in the five-year period, and the number of people assumed to be lost to the region through migration (since the rate of out-migration exceeds the rate of in-migration for each five-year age group). The resultant figure for each age group was then moved to the next highest five-year group, and the estimated number of births for the period was included as the lowest age group. This new set of figures was then used as the basis for projecting the population in the next five-year period.

This rather simple procedure is open to a number of objections, the biggest being that losses by death and migration in each age group occur simultaneously. As a check on the validity of the method, the 1961 population structure was projected to 1966, and the resultant projection was compared with the 1966 Census figures. The discrepancy amounted to 6%. For the period 1966 to 1976 it might be as much as 12% and for the period up to 1981 just over 19%. Because of the size of the discrepancy it was decided to limit most of the work to projecting the population only through ten years.

Fertility figures are based on information of births in the year 1961, and related to the 1961 Census data. The basic method was to compute the age-

specific fertility rates for each age-group of women aged 15 to 49 in the population of the region, and then to use these rates to predict, from the female population in each five-year projection period, the estimated number of births. However, since such figures are not actually available for the region, they were estimated by comparing the region with the rest of Scotland.

The crude fertility rates for each of the five counties and Aberdeen City were weighted by the proportion of population which each county accounted for in the region, and these weighted fertility rates were then averaged for the five years 1961 to 1966 to give a crude average rate for the region. Since this rate was lower than the comparable rate for all Scotland (see Table 7.4 in the Report) it indicated the need to scale down the Scottish age-specific fertility rates for application to the region. Thus, the Scottish age-specific rates were used to estimate the number of births for the region, and each age-specific rate was adjusted by the ratio of the actual total births to the estimated total births. This provided age-specific fertility rates for the region which, while not completely accurate, at least provide an accurate estimate of births in 1961. Fertility was assumed not to change throughout the period up to 1976, and the basis for changes in the number of births was the number of females of child-bearing age in the population. Births of boys and girls were projected separately by assuming that the ratio of boys to girls born was the same as the male/female ratio of the total population in the region.

Age-specific death rates for the region were obtained from the Registrar-General's Annual Reports, by adding the total deaths for each five-year age group in the region, and dividing them by the total population for the years 1961 to 1966. Unfortunately, since for the age groups between 15 and 74 the deaths are presented only in ten-year age groups it was possible only to calculate five-year age-specific rates for groups below age 15. Adjustments of the net population in each ten-year age group, after the losses due to death and migration were subtracted, were made, and will be discussed later. For Projection 1, these death rates were assumed to continue throughout the projection period, but for the other projections, the assumption that death rates would fall was made. The actual assumption about this fall in death rates was that used by the Registrar-General, namely that for age groups below 45 the death rate would fall by 50% in the next 40 years, and that the rate for age groups over 45 would decline progressively less.

Once the deaths from each group had been subtracted, the procedure was repeated for migration losses. The Registrar-General has age-specific figures relating to the difference between in- and out-migration which are used for computing net migration loss. Although this method is clearly not satisfactory, with the present state of virtual ignorance over age-specific data it is impossible to find any figures which purport to measure the separate age distribution of in- and out-migration accurately. Thus, while the age-specific rates are not at all intended to represent an accurate picture of the age distribution of population lost by migration, they do at least demonstrate the cumulative effect on the structure of the region's population of one possible pattern of migration. The actual age-specific rates used were supplied by the Registrar-General, and are consistent with those used in the population projections of other regions of Scotland calculated by his Department, although the actual total migration loss assumed in each projection for the North East will differ. The numbers of population lost from the region by migration were subtracted from the population in each age group to give a final distribution

of population by age group for the region. This final distribution, mainly in ten-year age groups, then needed to be broken down into five-year age groups, so that each group could be moved into the next highest five-year age group ready for the commencement of the next five-year projection period. This was done by assuming that the two five-year age groups in each ten-year age group were distributed in the same way at the end of the projection period as they were at the beginning of the period. Each group was apportioned on this assumption and then moved up into the next highest five-year group. The total number of births estimated for the period was then assumed to be the total number of children aged between 0 and 4. At the other end of the age structure, the number of people aged over 75 was added to the new group assumed to be aged between 75 and 80. It is impossible to ascertain, then, to what extent the growing size of the group of population aged over 75 is due to the arbitrary nature of the assumptions about the death and migration rates of this group, and to what extent the growing size of this group reflects a real trend in the structure of the population of the region.

III. Migration and its Relation to Urban Growth

The assumption behind much of the work on migration in the context of regional growth is that more information will make it possible to formulate policies aimed at stemming the present streams of migration loss. This is done by trying to ascertain the occupation and level of skills of the employees who are likely to leave the region, with the aim of providing more of these jobs in the future, thereby retaining future out-migrants. This view of the matter calls for some qualifications for the following reasons:

- (a) The relation between urban and regional growth and migration is very complex. Some at least of the workers moving away from a region are unlikely to be migrating because of a shortage of the job they presently hold (the assumption usually made); rather, they are moving in search of better jobs. Thus, migration policies ought to aim at providing better opportunities (as much as at more of the same opportunities) for potential migrants.
- (b) It is believed that too much concentration of regional policy on reducing out-migration rather than fostering in-migration may be misdirected. The Scottish Council Report already referred to⁽¹⁾ has shown that rising rates of out-migration are to be expected as part of the process of regional growth—areas with the most rapid rates of growth also experiencing increasing rates of out-migration.

Regional policy, so far as it is concerned with migration, should thus be aimed as much at encouraging in-migration to the region as at forestalling out-migration. We also know that migrants may be attracted to the region for reasons which are not simply the reverse of those prompting others to leave, so that the characteristics of the out-migrants may be an insecure basis for policy.

What little research is available into the relationship between migration and regional growth suggests that rising levels of migration are strongly related to the growth of large-scale firms, especially the bureaucratisation of many organisations, and the development of promotion prospects through a preparedness of particular personnel in the firms to migrate to other branches in order to gain higher

positions. Migration thus becomes part of a way of life for a group of employees looking for promotion. The literature⁽²⁾ suggests that there is a strong connection between urban growth, the development of large-scale bureaucracies, and the increasing rate of migration between urban areas of these professionally managerial employees. The promotion prospects of these people depend on their willingness to migrate, and consequently a high rate of migration between urban centres may well be an indication of the economic prosperity and growth of their employing organisations.

Employment opportunities for other groups of workers may ultimately then depend on whether or not the area can attract professional workers. Once an area has proved attractive to managerial employees, and firms are willing to locate in the area, the employment opportunities for local workers will open up. Thus, the attractiveness of area to such professional groups may be crucial to the aim of attracting new industries, providing new opportunities for local labour, and thereby stemming part of the outflow of migrants.

Urban areas of a certain size are capable of offering a wide range of services and cultural and entertainment facilities, solely because of their size. Other areas can only offer a very limited number of facilities, and these depend very heavily upon the continued support of a very committed group of patrons. Thus, such facilities as local repertory theatres, specialist cinemas, local chamber concerts and discotheques can be very precarious financial ventures in small urban areas, whereas in the larger urban areas, the very variety of facilities on offer is a source of greater support in that each customer does not need to support one venture so wholeheartedly. Also, the mass media have encouraged the wider participation of the public in the whole range of cultural and recreational facilities from the 'intellectual' to the 'pop'. Those who support one kind may also participate marginally in others, and this occasional use may be the critical factor determining the viability of any one venture. The ability of an area to attract the professional and managerial groups may well depend on these factors, as well as on those of more obvious importance to the middle classes such as an adequate choice of schools and housing. The availability of this variety of cultural and recreational facilities, which is already considerable in the case of Aberdeen City, should enhance the attractiveness of the North East to migrants from elsewhere, and will also be extended by their increasing numbers.

In Chapter 7 of the text we noticed certain features of the role of Aberdeen City in relation to migration patterns. The significant ones were: the strong rural-urban movement towards the City of people who are likely to be attracted only by urban opportunities; the importance of the City in the reception of long-distance in-migrants and the preponderance within these of the professional and managerial groups; and the tendency of City-born out-migrants to travel long distances when they migrate. These features point to Aberdeen City's growing role in the aspect of migration most closely associated with regional growth. Economic growth encourages a rising rate of migration which tends to have progressively less connection with the rural parts of a region (apart from those immediately

⁽¹⁾ See: R. K. Merton, *Social Theory and Social Structure* (Free Press of Glencoe, 1957), W. Warton, *Social Mobility and Social Class in Industrial Civilisation*, in *Class Structure and Open Mind* (Edinburgh, 1966), and R. E. Pahl, *Processes and Patterns of Urban Growth and Change*, Paper given to Third Annual Race Relations Conference, 1968.

⁽²⁾ See text, para. 7.11.

surrounding the City), and is more and more associated with the growth of the City itself. The implication for regional growth is that the welfare of the region may be served best by providing the sorts of opportunities that the long-distance in-migrants are seeking. Any policy aimed at reducing net outward migration needs to be placed in the context of the long-term goals of increasing the attractiveness of

the region to in-migrants (and hence to the incoming firms that depend on their services). The success of the region in attracting more branches of national organisations, including Government departments, will enhance this attractiveness and make it easier to retain those potential out-migrants who would be content to remain in the region if better opportunities were available.

IV. Population Changes in North-East Burghs and Districts

TABLE B.2
Population Changes, 1951-66

	Census		Mid-year estimates		Percentage changes	
	1951 000's	1961 000's	1961 000's	1966 000's	1951-61 %	1961-66 %
Aberdeen City and Districts	211.95	215.41	215.67	215.66	+ 1.6	+0.1
Aberdeen City	182.78	185.39	185.22	189.46	+ 1.4	+1.0
Aberdeen District	25.81	27.40	27.15	29.15	+ 6.3	+7.3
Lower Deeside District	3.36	3.01	3.00	3.05	-10.4	+1.7
Aberdeen County: Burghs	41.59	40.51	40.15	41.08	- 2.6	+2.4
Ballater	1.80	1.13	1.06	1.09	-12.9	+2.8
Ellon	1.49	1.45	1.44	1.48	- 2.5	+2.6
Fraserburgh	10.44	10.46	10.40	10.73	+ 0.1	+3.2
Huntly	4.20	5.95	5.88	5.60	+ 5.9	-2.1
Inverurie	5.06	5.15	5.17	5.23	+ 1.9	+1.2
Kintore	0.67	0.75	0.75	0.79	+13.7	+5.3
Oldmeldrum	1.10	1.08	1.08	1.10	- 1.8	+1.9
Peterhead	12.76	12.50	12.52	13.00	- 2.0	+3.8
Rosneathy	1.17	1.14	1.15	1.12	- 2.8	-2.6
Turriff	2.99	2.89	2.68	2.76	-10.3	+3.0
Bay of Butha: Burghs	28.45	27.58	27.42	27.16	- 3.0	-0.9
Aberchirder	0.80	0.75	0.75	0.80	- 5.7	+6.7
Aberlour	1.15	0.96	0.96	1.00	-16.9	+4.2
Banff	5.36	5.33	5.23	5.36	- 0.8	+4.0
Buckie	7.70	7.67	7.70	7.50	- 0.4	-2.6
Cullen	1.56	1.36	1.33	1.30	-13.7	+2.3
Dufftown	1.46	1.56	1.54	1.52	+ 6.6	-1.3
Findochty	1.49	1.33	1.35	1.25	-10.7	-7.4
Keith	4.36	4.21	4.17	4.09	- 3.6	-1.9
Marluff	3.32	3.46	3.46	3.49	+ 4.7	+0.9
Portnackie	1.46	1.25	1.25	1.14	-14.3	-9.5
Portsoy	1.79	1.69	1.67	1.71	- 5.4	+2.4
Kinross County: Burghs	8.77	8.73	8.72	8.62	- 0.4	-1.1
Banchory	1.96	1.92	1.89	1.90	- 2.1	+4.0
Inverherrie	0.88	0.92	0.94	0.89	+ 4.1	-5.3
Laurencekirk	1.48	1.39	1.35	1.40	- 6.5	+5.7
Stonehaven	4.44	4.50	4.54	4.34	+ 1.6	-2.2
Maray County: Burghs	24.15	26.63	26.41	27.37	+10.5	+2.1
Burghhead	1.37	1.35	1.36	1.42	- 1.6	+2.9
Elgin	10.62	11.07	12.07	12.39	+12.6	+2.7
Forres	4.46	4.77	4.81	4.57	+ 7.0	-5.0
Grovetown	1.54	1.58	1.60	1.54	+ 2.6	-3.8
Louisaemouth	4.35	5.45	5.86	6.33	+18.3	+8.4
Rothas	1.21	1.11	1.11	1.10	- 8.7	-0.9
Nairn County	4.77	4.90	4.84	4.88	+ 4.2	+0.8
Landward Areas⁽¹⁾	143.15	127.43	127.41	125.76	-11.0	-2.9
Aberdeenshire	77.59	68.68	69.04	65.25	-11.0	-4.1
Banffshire	21.70	18.47	18.72	17.77	-13.0	-5.1
Kincairdineshire	15.76	13.82	13.86	15.66	-12.2	+1.4
Maray	24.13	22.54	23.33	23.77	- 6.6	+1.9
Nairn	3.95	3.52	3.46	3.28	-10.9	-5.2
Total North East	462.44	450.99	450.70	448.55	- 2.5	-0.5

⁽¹⁾ The figures for Aberdeen District and Lower Deeside District are excluded from the respective county totals and from the total figures for Landward Areas.

Source: R.G.S.

APPENDIX C⁽¹⁾

Labour

I. Unemployment and Cyclical Changes in Economic Activity

In paragraphs 8.8 and 8.15 of the text reference was made to the fact that economic activity in the Survey area was likely to have been cyclically higher in 1966 than in 1961 and that for this reason some, perhaps most, of the growth in employment was likely to be due to this factor rather than to a more dependable trend in jobs. The percentage rates of unemployment in the North East are given in Table C.1 below. Figures for the intervening years are not available but the behaviour of the British and Scottish statistics tend to support this view. For Britain the rate of unemployment was similar in

1961 and 1966, while Scotland, which tends to lag behind Britain in the trade cycle, had a lower rate of unemployment in 1966 than in 1961. In attempting to establish the trend rate of growth in the survey area the 1966 figures have been recalculated at the 1961 rates of unemployment in Table 8.7 of the text.

II. The Rate of Growth in Female Employment, 1961-66

In calculating the rates of growth of female employees in employment, in the North East, between 1961 and 1966, the Census data were not used on the grounds that the 1961 figure was almost cor-

TABLE C.1
*Rates of Unemployment in
North-East Scotland,⁽¹⁾ 1961 and 1966*

	Census data (April)		D.E.P. data (June)	
	Males	Females	Males	Females
	%	%	%	%
1961	4.9	3.4	3.2	2.0
1966	4.1	4.5	2.5	1.4

⁽¹⁾ Unemployed as a percentage of employees (including unemployed).

TABLE C.2
Rates of Unemployment⁽¹⁾ in Great Britain and Scotland, 1961-67
per cent

	1961	1962	1963	1964	1965	1966	1967
Great Britain	1.5	2.0	2.5	1.6	1.4	1.5	2.4
Scotland	3.2	3.8	4.8	3.7	2.9	3.0	3.9

⁽¹⁾ Registered unemployed as a percentage of total employees (including unemployed).
Source: D.E.P.

TABLE C.3
*Great Britain: Economically
active as a Percentage of Five-
year Age Groups, 1966*
per cent

Age Group	Males	Females
15-19	70.6	66.5
20-24	92.6	61.6
25-29	97.5	40.4
30-34	98.3	41.5
35-39	98.5	50.0
40-44	98.3	55.2
45-49	98.0	56.5
50-54	97.3	53.3
55-59	95.4	46.3
60-64	88.7	33.3
65-69	37.3	13.0
70+	14.0	3.4

Source: Census, 1966.

tainly an understatement. The same is likely to be true of the 1961 figure for self-employed females. Upward adjustments of the 1961 figures were therefore made on the following assumptions:

- (i) that the 1966 Census figures for female employees in employment and for female self-employed are accurate;
- (ii) that the rate of growth of females in employment derived from the D.E.P. data is applicable to the Census data. If this is so then the 1961 Census figure for females in employment would have been 59,400, instead of 51,000 as recorded;
- (iii) that the ratio which this adjusted figure bears to the recorded 1961 Census figure applies equally to female self-employed. This gives an adjusted female self-employed figure for 1961 of 3,100, which is then used as a base in calculating the decline in female self-employment between 1961 and 1966.

III. Economically Active Males and Females as Percentages of Various Age Groups aged 15 and over at April 1966, in Great Britain

Reference is made in paragraph 8.11 to activity rates for males and females in Great Britain by five-year age groups, from age 15 to 69 and for the group 70 plus. These were calculated by taking the economically active (the employed, the unemployed and the self-employed) in each five-year age group and expressing this figure as a percentage of the total population in that age group. All the figures were derived from the 1966 10% Sample Census for Great Britain, and the results are set out in Table C.3.

These were the rates which were applied to the North-East population in 1966 to give the third set of figures, *North-East Scotland (estimated)*, in Table 8.10. These same rates were applied to the population of population Projection 5 of Chapter 7 adjusted to an 'enumerated' basis, to give the potential labour force in 1971 and 1976.

APPENDIX D⁽¹⁾

Agriculture

I. Notes on Methods and Sources and Tables

Statistical sources: Agricultural Census

The chief source of data that has been used in the Agricultural Census which is carried out early every June. Every occupier of agricultural land of over 1 acre is under a statutory obligation to complete the form with information about the area in each crop, livestock numbers and labour force. These data are normally published on a county and country basis, but parish tables are available freely from the Scottish Records Office. No use has been made in this study of the December Agricultural Census. Data have also been used from the triennial machinery census taken in February.

The sources of data used or consulted, other than the June Agricultural Census, are the D.A.F.S., the Aberdeen and District Milk Marketing Board, the Scottish Home and Health Department, the Land-ownership Enquiry, the Population Census, the D.E.P. and the North of Scotland College of Agriculture.

Grouping of Parishes according to Farming Type

To enable an analysis of the intra-regional changes in agriculture to be undertaken the parishes were grouped on the following basis. The 1963 statistics were taken for this purpose and the Upland parishes were the first to be identified. All those with a greater area of rough grazing than crops and grass were classified in this group which included 24 parishes.

The lowland parishes were then divided according to the importance of dairying. The criterion for this choice was the number of dairy cattle per 100 acres of crops and grass. Nine dairy cattle per 100 acres of crops and grass were taken as the dividing line, and 36 parishes fell on the dairying side of the line. These were scattered throughout the region, but formed several obvious sub-groups. The highest of these was in the Aberdeen City hinterland with 20 parishes included. In the south of Kincardine four parishes formed a second sub-group. Two further

sub-groups were identified, one in Moray and Nairn (6 parishes) and the other along the Banff coast (4 parishes). This left Peterhead and Fraserburgh and these formed the fifth sub-group of dairying parishes.

There remained 88 lowland parishes where dairying was not important. There were no obvious features that could sub-divide these except that the Moray and Nairn and the south Kincardine parishes tended to have less grassland and more crops than the rest. These two sub-groups were therefore separated to include 10 and 5 parishes respectively. The remaining 73 parishes were not sub-divided. Map 9.1 illustrates this classification.

The Inflow and Outflow of Cattle in N.E. Scotland 1964-66 (Diagram 9.1)

Definitions, sources and assumptions:

Breeding cows (June 1964): includes all cows and heifers except heifers in calf for first time.

Calves born, 1963-64: assumed to equal breeding cows as defined above but excluding beef cows in calf but not in milk.

Calves slaughtered, 1963-64: slaughterhouse statistics, June 1963 to May 1964 (Scottish Home and Health Department).

Calves under 1 year, June 1964: beef and dairy calves in June Census.

Young calves from outside N.E. Scotland: found by difference = calves under 1 year + calves slaughtered - calves born.

Dairy females 1-2 years (June 1965): June Census. Beef males and females 1-2 years (June 1965): June Census.

Weaned calves from outside N.E.: found by difference = beef and dairy cattle 1-2 years (1965) - calves under 1 year (1964).

Beef heifers in calf for first time (June 1966): June Census.

Beef cattle over 2 years (June 1965) and (June 1966): June Census.

Slaughterings June 1963 to May 1966: heifers and steers slaughtered as shown in slaughterhouse statistics.

Beef stores from Ireland and elsewhere: found by difference = (slaughtered + beef over 2 years 1965 + beef heifers 1966) - (beef males and females 1-2 years 1965 + beef over 2 years 1965).

⁽¹⁾ This Appendix was prepared by Mr. A. M. Morgan Rees and Mr. D. C. Catt.

Standard Man-Day Classification

One method adopted to measure the size of a farm business is to calculate the standard labour requirements for the cropping and stocking of a farm, using as the unit of measurement the 'standard man-day'. Standard labour requirements are the annual requirements of manual labour needed, on average, for the production of crops and livestock with an addition for essential maintenance and other necessary tasks. These requirements are expressed in terms of standard man-days which represent 8 hours manual work for an adult male worker under average conditions. For many years the Department of Agriculture and Fisheries for Scotland has undertaken analyses of the results of the June Census and this work allows one to examine the size of holdings in the region measured in terms of standard man-days for the years 1952 and 1967.

Units which require at least 250 man-days per annum are designated 'full-time farms'. These units, on the basis of their stocking and cropping, appear to give full-time employment for at least one person—often the farmer himself. When the agricultural units require less than 250 man-days per annum they are designated 'other units' and divided into two groups—above and below 500 hours labour requirements. The units requiring between 500 and 2,000 hours of labour are categorised as 'part-time' units which sometimes only provide a supplementary income to the occupier who may spend the majority of his time on other employment. The units requiring less than 500 hours of labour per annum can be referred to as 'spare-time' units and have little agricultural significance.

II. Supplementary Tables

TABLE D.1
Cereal and Root Crop Statistics: N.E. Scotland
thousand acres

Crop	1950	1960	1967
Wheat	4.1	18.8	9.5
Barley	39.1	70.0	196.0
Oats	300.7	240.9	139.2
Total cereals	351.9	329.2	344.7
Potatoes	35.0	26.5	20.9
Sugar beet	0.5	0.3	0.1
Turnips, etc. ⁽¹⁾	108.8	95.9	67.5
Total roots	144.3	122.7	88.5

⁽¹⁾ Includes other storage crops, including rape, cabbage etc., grown for stock feed.

Source: D.A.F.S.

TABLE D.2
Intra-Regional Trends in Cereals Production: N.E. Scotland
Cereal Area as Percentage of Crops and Grass Area

Group	1950	1960	1963	1967
<i>Region</i>	% 35.4	% 32.8	% 32.4	% 34.0
<i>Uplands</i>	29.0	26.9	23.6	22.8
<i>Lowlands</i>				
<i>S. Kincardine—Non-dairy</i>	38.6	34.3	35.6	39.7
<i>Dairy</i>	40.9	37.4	38.3	44.8
<i>Moray and Nairn—Non-dairy</i>	37.9	35.1	35.5	41.0
<i>Dairy</i>	37.4	34.0	35.5	44.8
<i>Aberdeens, Banff and N. Kincardine—Non-dairy</i>	36.0	33.6	33.7	34.0
<i>Dairy—Aberdeens</i>	34.2	32.2	32.3	33.5
<i>Peterhead and Fraserburgh</i>	31.9	26.1	24.3	26.8
<i>Banff Coast</i>	39.5	38.2	38.0	40.3

Source: D.A.F.S.

TABLE D.3
Intra-Regional Change in Barley, Oats and Wheat Acreages:
Area of each Cereal as Percentage of Crops and Grass Area

Group	Barley		Oats		Wheat	
	1950	1965	1950	1965	1950	1965
Region	9.9	17.2	30.9	14.6	0.5	1.3
Upland	2.4	4.7	25.5	19.0	0.1	0.2
Lowland						
S. Kincardine—Non-dairy	5.5	21.0	29.4	8.0	3.7	4.5
Dairy	8.7	25.0	38.0	8.9	4.0	5.6
Moray and Nairn—Non-dairy	15.8	24.4	22.3	11.1	2.0	2.8
Dairy	14.4	24.7	20.3	9.2	2.7	4.5
Aberdeen, Banff and N. Kincardine—Non-dairy	2.4	17.0	33.4	15.4	0.1	0.9
Dairy—Aberdeen	2.9	15.6	31.2	17.2	0.1	1.2
Peterhead and Fraserburgh	0.8	14.5	31.1	8.9	0.0	1.4
Banff Coast	12.0	22.2	25.5	19.0	0.1	0.4

Source: D.A.F.S.

TABLE D.4
Areas of Fruit and Vegetables in N.E. Scotland
acres

Year	Pears	Carrots	Beetroot	Other veg.	Total veg.	Rasp-berries	Straw-berries	Other fruit	Total fruit	Flowers and nursery stock
1950	19	218	53	854	1,154	64	84	74	222	n.a.
1955	117	209	27	516	869	84	58	64	206	n.a.
1960	766	382	28	483	1,559	175	75	68	318	329
1965	980	272	51	558	1,869	156	115	44	315	447
1967	1,028	293	44	495	1,860	126	140	93	359	549

n.a. = Not available.

Source: D.A.F.S.

TABLE D.5
Grassland in N.E. Scotland

	1950	1955	1961	1963	1965	1966	1967
Grass area ⁽¹⁾ as per cent of total crops and grass area	%	%	%	%	%	%	%
	69.6	52.9	54.8	56.4	56.6	56.6	56.7
	<i>Thousand acres</i>						
Temporary grass	430	467	508	525	520	514	495
Permanent grass ⁽²⁾	66	62	42	44	55	57	80
Total	496	529	550	567	575	571	575
Mown grass	78	82	129	137	155	153	n.a.
Grazing	418	447	421	430	420	418	n.a.
Total	496	529	550	567	575	571	—

n.a. = Not available.

⁽¹⁾ Rough grazing excluded.

⁽²⁾ Since 1960 defined as grass over 7 years old.

Source: D.A.F.S.

TABLE D.6
Utilisation of Mown Grass in N.E.
Scotland, 1951 and 1966
thousand acres

Utilisation	1951	1966
Hay . . .	66.8	98.2
Silage . . .	12.2	72.0
Drying . . .	2.3	1.0

Source: D.A.F.S.

TABLE D.7
Intra-Regional Distribution of Beef Cattle in N.E. Scotland, 1967

Group	Beef cows and heifers	Beef bulls	Other beef cattle			Cows receiving Hill Cow Subsidy (1966)
			Over 2 years	1 to 2 years	Under 1 year	
Region	82.5	3.0	55.4	166.8	122.8	55.6
<i>Percentage of regional total of each class found in area</i>						
<i>percentage</i>						
Uplands	28.1	26.6	1.3	5.1	17.8	37.1
Lowlands						
S. Kincardine—Non-dairy	3.2	6.7	4.1	2.6	2.8	2.4
Dairy	0.5	0.0	1.9	1.6	1.3	0.2
Moray and Nairn—Non-dairy	4.8	6.7	2.6	3.7	3.3	5.9
Dairy	2.5	3.3	0.9	1.8	2.1	2.1
Aberdeen, Banff and N. Kincardine—Non-dairy	52.8	46.7	70.5	69.0	58.5	50.1
Dairy—Aberdeen	6.1	10.0	14.2	12.3	10.8	3.2
Peterhead and Fraserburgh	0.4	0.0	1.5	1.1	1.0	0.0
Banff coast	1.6	0.0	3.0	2.8	2.2	1.0
Region total	100.0	100.0	100.0	100.0	100.0	100.0

Source: D.A.F.S.

TABLE D.8
Dairying in N.E. Scotland

	1955	1960	1965	1967
<i>thousand head</i>				
Dairy cows and heifers	46.1	44.7	42.5	40.7
Dairy bulls and bull calves	1.0	0.8	0.6	0.6
Other dairy cattle—all ages	19.4	18.6	16.9	17.4
<i>million gallons</i>				
Sales of milk off farms ⁽¹⁾	20.2	22.2	23.2	23.2
<i>numbers</i>				
Registered milk producers ⁽¹⁾	620	605	529	467
<i>number of cows</i>				
Average size of dairy herd ⁽¹⁾	43	44	51	56

⁽¹⁾ Aberdeen and District Milk Marketing Board Area only, i.e. excludes Moray and Nairn.

Source: Aberdeen and District Milk Marketing Board and D.A.F.S.

TABLE D.9
Intra-Regional Distribution of Dairy Cows and Heifers in N.E. Scotland
thousand head

Group	1950	1955	1960	1963	1965	1966	1967	1967 as percentage of 1950
<i>Region</i>	40.7	46.1	44.7	43.9	42.5	41.3	40.7	% 83.6
<i>Uplands</i>	3.0	2.4	2.2	1.8	2.0	1.8	1.8	60.0
<i>Lowlands</i>								
<i>S. Kincardine—Non-dairy</i>	1.0	1.1	1.1	1.1	1.0	0.9	0.9	90.0
Dairy	1.2	1.3	1.5	1.5	1.6	1.7	1.7	141.7
<i>Moray and Nairn—Non-dairy</i>	2.6	2.5	1.7	1.6	1.4	1.6	1.9	76.0
Dairy	2.3	2.4	2.6	2.8	3.3	3.6	3.6	163.6
<i>Aberdeen, Banff and N. Kincardine—Non-dairy</i>	20.9	18.8	17.2	16.9	15.3	14.2	13.6	65.0
Dairy—								
Aberdeen	13.8	13.3	14.2	14.0	13.9	13.4	13.5	97.8
Peterhead & Fraserburgh	1.4	1.6	1.4	1.5	1.4	1.5	1.3	92.8
Banff coast	2.5	2.7	2.8	2.7	2.6	2.7	2.4	96.0

Source: D.A.F.S.

TABLE D.10
Sheep in N.E. Scotland
thousand head

	1950	1955	1960	1965	1967
Breeding ewes	182	209	267	280	265
Rams	7	7	9	10	9
Lambs under 1 year	230	267	349	354	366
Other sheep:					
Breeding	54	56	61	58	40
Fattening	36	40	26	20	12
Ewes receiving Hill Sheep Subsidy	n.a.	54	44	47	n.a.

n.a. = Not available.

Source: D.A.F.S.

TABLE D.11
Intra-Regional Distribution of Breeding Sheep in N.E. Scotland

Group	Ewe numbers thousand head		1967 as a percentage of 1950
	1950	1967	
<i>Region</i>	182.3	264.4	% 147.4
<i>Uplands</i>	65.8	72.1	109.6
<i>Lowlands</i>			
<i>S. Kincardine—Non-dairy</i>		7.3	117.8
Dairy		1.7	170.5
<i>Moray and Nairn—Non-dairy</i>		2.4	320.8
Dairy		1.8	144.4
<i>Aberdeen, Banff and N. Kincardine—Non-dairy</i>		89.9	161.7
Dairy—Aberdeen		10.2	180.4
Peterhead and Fraserburgh		1.6	68.7
Banff Coast		1.6	350.0

Source: D.A.F.S.

TABLE D.12
Intra-Regional Distribution of Sows and Gilt in N.E. Scotland

Group	Thousands head		No. of sows in 1967 as percentage of number in 1950
	1950	1967	
<i>Region</i>	7,312	25,495	% 343.6
<i>Uplands</i>	370	1,572	424.8
<i>Lowlands</i>			
<i>S. Kinross—Non-dairy</i>	238	1,181	506.0
<i>Dairy</i>	172	1,079	627.8
<i>Moray and Nairn—Non-dairy</i>	342	1,327	388.0
<i>Dairy</i>	225	611	271.5
<i>Aberdeen, Banff and N. Kinross—Non-dairy</i>	4,096	13,778	336.4
<i>Dairy—Aberdeen</i>	1,581	4,691	296.7
<i>Peterhead and Fraserburgh</i>	45	347	807.0
<i>Banff Coast</i>	250	909	363.6

Source: D.A.F.S.

TABLE D.13
Poultry in N.E. Scotland
thousand head

	1950	1955	1960	1965	1967
Fowls 6 months and over	1,908	1,686	1,562	1,545	1,356
Fowls under 6 months ⁽¹⁾	1,875	1,669	1,193	614	460
Broilers	—	—	427	685	815
Ducks and geese	129	49	25	14	12
Turkeys	41	35	48	31	36
Total Poultry	4,033	3,439	3,259	2,889	2,713

⁽¹⁾ Includes all table fowls upto 1960.

Source: D.A.F.S.

TABLE D.14
*Agricultural Land in N.E. Scotland,
1951-68*
thousand acres

Year	Crops and grass	Rough grazing
1951	1,004	740
1952	1,008	750
1953	1,009	740
1954	1,013	737
1955	1,015	740
1956	1,014	739
1957	1,016	750

Source: D.A.F.S.

TABLE D.15
Number of Agricultural Units in N.E. Scotland

Year	Aberdeen	Banff	Kincardine	Maray	Nairn	Region
1950	9,594	2,753	1,493	1,418	520	15,578
1955	9,408	2,623	1,462	1,398	513	15,134
1956	9,389	2,575	1,431	1,333	512	14,940
1957	9,146	2,474	1,419	1,261	506	14,609
1958	8,562	2,255	1,306	1,152	285	13,560
1959	8,026	2,090	1,184	1,065	271	12,636
1960	7,957	2,087	1,170	1,053	262	12,537
1961	7,913	2,088	1,173	1,041	257	12,442
1962	7,773	2,018	1,160	1,021	249	12,221
1963	7,717	1,905	1,152	1,005	245	12,102
1964	7,334	1,830	1,079	955	224	11,422
1965	7,282	1,797	1,067	914	206	11,269
1966	7,180	1,768	1,052	896	203	11,099
1967	7,061	1,741	1,081	880	205	10,918

Source: D.A.F.S.

TABLE D.16
Analysis of Agricultural Units and Crops and Grass Acreage in
N.E. Scotland
by Crops and Grass Acreage Size Groups, 1962 and 1966

Size groups	Per cent of total agricultural units		Per cent of total crops and grass acreage	
	1962	1966	1962	1966
Units with no crops and grass	0.0	0.6	0.0	0.0
$\frac{1}{2}$ - $4\frac{1}{2}$ acres of crops and grass	7.0	6.6	0.2	0.2
5 - 14 $\frac{1}{2}$ "	19.0	17.7	1.9	1.6
15 - 19 $\frac{1}{2}$ "	3.6	3.3	0.6	0.6
20 - 29 $\frac{1}{2}$ "	5.7	5.3	1.7	1.4
30 - 49 $\frac{1}{2}$ "	10.7	10.2	5.1	4.4
50 - 74 $\frac{1}{2}$ "	15.6	13.9	10.3	9.4
75 - 99 $\frac{1}{2}$ "	10.7	10.5	11.2	10.0
100 - 149 $\frac{1}{2}$ "	12.4	13.1	18.5	17.6
150 - 299 $\frac{1}{2}$ "	12.5	13.6	31.1	30.6
300 - 499 $\frac{1}{2}$ "	2.9	3.8	13.0	15.4
500 - 999 $\frac{1}{2}$ "	0.7	1.1	5.2	7.5
1,000 acres and over	0.1	0.1	1.0	1.3
Total	100.0	100.0	100.0	100.0

Source: D.A.F.S.

TABLE D.17
Classification of Full-time Holdings by Type of Farm,
N.E. Scotland, 1962 and 1967

Farm type	1962		1967	
	Number	%	Number	%
Hill sheep	12	0.2	15	0.2
Upland	367	4.7	658	10.2
Rearing with arable	2,378	36.7	1,857	28.7
Rearing with intensive livestock	1,143	14.6	565	9.0
Arable rearing and feeding	1,629	20.8	1,360	21.1
Cropping	979	12.5	1,304	20.1
Dairying	638	8.1	466	7.5
Intensive:				
Horticultural	40	0.5	52	0.8
Poultry	64	0.6	77	1.2
Pigs	55	0.7	56	0.9
Mixed	30	0.4	22	0.3
Total intensive	189	2.4	207	3.2
Total full-time holdings	7,835	100.0	6,479	100.0

Source: D.A.F.S.

Note on Table D.17

The most important group of farming types found in the region were those associated with rearing—Rearing with arable, Rearing with intensive livestock and Arable rearing and feeding. Nearly two-thirds of all full-time farms in the region fell into these categories, but their number declined by approximately one-third between 1962 and 1967. Hill sheep farms were almost non-existent in the area, but Upland farms accounted for 10% of all full-time holdings and there had been a very appreciable increase (nearly 80%) in their number. One-fifth of all full-time holdings were of the Cropping type and these too had increased by one-third between 1962 and 1967. Dairying farms accounted

for only 7.5% of all full-time holdings and their number had declined by nearly 25% since 1962. These changes in the proportion of full-time farms falling into the different type groups indicate the changing pattern of agriculture in terms of land use and stocking that has occurred due to economic circumstances. However, some of the change may be accounted for by adjustments in the standard man-day requirements for particular classes of stock and type of crop that have been made between the 1962 and 1967 classifications. Such adjustments will in turn affect the classification of farms into their various types and may account for part of the very large increase in the number of Upland farms and the decrease in Rearing farms between the two years.

TABLE D.18
Agricultural Employees in N.E. Scotland, 1961 and 1965

Source of data	1961		1965	
	Males	Females	Males	Females
Population Census	14,370	n.a.	11,390	n.a.
D.E.P.	12,798	1,420	10,488	1,274
Agricultural Census				
Full-time labour	12,743	1,056	9,552	566
Part-time and casual labour	1,430	830	1,020	513
Total	14,173	1,886	10,572	1,079

n.a. = Not available.

TABLE D.19
The Age Structure of Full-time Male Labour Leaving Agriculture, 1967 to 1968: N.E. Scotland

Age group	No. of agricultural workers, June, 1967	Theoretical No. ⁽¹⁾ of agricultural workers, June, 1968	Actual No. of agricultural workers, June, 1968	Estimated No. of agricultural workers leaving the industry between 1967 and 1968
Under 18 years	472	n.a.	385	n.a.
18 and under 20 years	478	428	406	22
20 and under 25 years	591	1,032	862	170
25 and under 35 years	2,008	2,005	1,779	226
35 and under 45 years	2,147	2,133	2,019	114
45 and under 65 years	2,501	2,391	2,453	138
Over 65 years	187	n.a.	199	n.a.

⁽¹⁾ Assuming no movement out of agriculture.

Source: Derived from D.A.P.S. Statistics.

TABLE D.20
Youth Employment in N.E. Scotland: First Jobs of School-Leavers under 18, 1962-66

Year	Boys entering agriculture		Girls entering agriculture	
	Number	% of all school-leavers	Number	% of all school-leavers
1962	534	16.5	52	1.7
1963	458	16.5	37	1.3
1964	484	14.4	35	1.3
1965	334	11.3	13	0.5
1966	225	10.5	14	0.6

Source: D.E.P.

TABLE D.21
*Intra-Regional Distribution of Full-time Regular Male
Agricultural Labour in N.E. Scotland*

Group	1955	1960	1965	1967	Numbers in 1967 expressed as a percentage of numbers in 1955
Region	14,425	13,125	10,337	8,784	60.9
Uplands	1,186	1,158	875	769	64.6
<i>Lowlands</i>					
S. Kincardine—Non-dairy	606	601	448	442	70.6
Dairy	402	370	326	282	70.1
Moray and Nairn—Non-dairy	867	817	617	510	58.8
Dairy	621	544	458	370	59.6
Aberdeen, Banff and N. Kincardine—Non-dairy	7,554	6,766	5,295	4,386	58.1
Dairy—					
Aberdeen	2,391	2,180	1,745	1,516	63.4
Peterhead and Fraserburgh	193	185	146	123	63.7
Banff Coast	573	506	432	386	67.4

Source: D.A.F.S. Statistics.

TABLE D.22
Labour and Machinery: Identical Sample of Farms in North of Scotland

Type of farm	Total labour costs ⁽¹⁾			Machinery costs ⁽²⁾		
	1964/65	1965/66	1966/67	1964/65	1965/66	1966/67
	£ per 100 cows	£ per 100 cows	£ per 100 cows	£ per 100 cows	£ per 100 cows	£ per 100 cows
Hill sheep	99	102	107	26	30	37
	£ per acre	£ per acre	£ per acre	£ per acre	£ per acre	£ per acre
Upland rearing	0.9	1.1	1.1	0.5	0.6	0.5
Mixed farms (cattle and sheep)	7.8	7.4	7.0	4.5	4.7	5.2
Mixed farms (arable)	12.0	12.5	11.6	6.3	6.8	7.2
Mixed farms (intensive pigs and poultry)	10.5	9.6	10.7	7.1	6.3	7.4
Dairy	11.8	12.4	11.2	8.1	8.1	8.4

(1) Regular and casual labour.

(2) Machinery repairs, depreciation and fuel, but not contract charges.

Source: *Farm Income in the North of Scotland*, North of Scotland College of Agriculture.

APPENDIX E⁽¹⁾

Services

I. The Export Base

Regional economic studies often stress the division of regional activity into an export or *base* sector (typically Manufacturing and agriculture) and a *residential* or *non-base* sector (typically the Service industries and Construction). A base ratio (i.e. basic/non-basic employment, output or income) is estimated, and is sometimes used for projection purposes. Given a base employment ratio it is frequently assumed that changes in employment can be forecast from changes in the export base. In such a calculation the Service industries are frequently assigned a dependent and passive role in the development of a regional economy.

It is dangerous to place much reliance on predictions derived from base studies. If the ratio is estimated in employment terms we must remember that employment is a very crude proxy for income. Because of indivisibilities and excess capacity in

residential sectors substantial additions to the export base may be made without giving an immediate boost to residential employment. Another serious defect of the employment measure is that it cannot take adequate account of non-wage income.⁽²⁾ Considerable Service activity (particularly in the professional services) may be supported by non-wage income, and there is some evidence that non-wage income levels are relatively high in North-East Scotland. For example, the Income Survey of 1964-5 shows that Profits and Professional Earnings (Schedule D) accounted for 21.4% of total income in the counties of the survey area, compared with 10.1% for Scotland as a whole; the ratio of net

⁽¹⁾ This Appendix has been prepared by Mr. H. W. Richardson, with the exception of Part III which was prepared by Mr. R. Shaw.

⁽²⁾ In the exercise below the self-employed are excluded because of data deficiencies.

investment income to total net income was 9.7% in the survey area which is again rather higher than the average for Scotland (7.9%).

Secondly, the base ratio is an average ratio, while for short-run forecasting a marginal ratio is needed. Marginal ratios, however, tend to fluctuate widely. Moreover, whereas the average base ratio may be appropriate for long-run projections the structure of the regional economy may change so much in the long run that projections cannot be made from current average values.

Thirdly, the common inferences from base studies, that export activity is the sole independent determinant of regional growth and that Service sectors are secondary and passive, are misplaced. Import-substitution and productivity improvements may be important independent sources of a region's growth. Furthermore, some Service activities should really be included in the base component in the sense that they are sustained by a net flow of income from outside the region, for example tourism and Services financed out of Central Government expenditure. Other Service establishments can be regarded unequivocally as exporting firms: the head office of a national insurance company or building society is a typical case in point.

Although base analyses are very imperfect tools for forecasting, they can nevertheless throw considerable light on the structure of the regional economy—for example, by indicating heavily over- and under-represented sectors. We believed that it was worthwhile carrying out a base study for North-East Scotland. Of the different methodologies possible,⁽¹⁾ we adopted a location quotient approach supplemented by cross-checking for many Manufacturing sectors against geographical distribution of sales estimates obtained from the Manufacturing questionnaire. A direct estimate via survey methods would have been too expensive, and would have given rise to estimation difficulties because of input-output connections (i.e. sales to other local firms may in some cases be indirect exports). The assumption approach (i.e. assigning industries to the basic and non-basic sectors on ad hoc grounds) is too crude and arbitrary.

Location quotients were estimated for employment in each industry in North-East Scotland, by minimum list heading, for June 1966 in North-East Scotland, using Great Britain as a benchmark. From these we calculated numbers of 'surplus' workers, i.e. the difference between actual local industry employment and the region's *pro-rata* share of national industry employment for industries with location quotients greater than unity; we also estimated the 'deficits' of workers in those industries with low location quotients.⁽²⁾ These 'surpluses' and 'deficits' gave us some guide to pinpointing those industries which are not proportionately represented in North-East Scotland. We obtained an estimate of total base employment by aggregating all the 'surplus workers' industry by industry. This yielded a basic/non-basic ratio of 1:1.3, and a base employment multiplier (defined simply as the ratio of total employment to basic employment) of 2.3.⁽³⁾

The location quotient technique for isolating the economic base requires certain heroic assumptions, for example, that the pattern of demand in North-East Scotland is identical to that in Great Britain, and that productivity per worker in each regional industry is the same as the national average. It also implicitly assumes that the nation is a closed economy; unless this is granted, the assumption that a unitary location quotient means that a region satisfies exactly its internal needs is invalid. The drawbacks of the methodology are, therefore, quite serious. For this reason, cross-checks were carried out by referring to data on the geographical distri-

bution of sales from the Manufacturing Enquiry. These tests revealed quite marked inconsistencies, though for some sectors, such as paper, the base study results were confirmed. Examples of discrepancies include Shipbuilding with a high location quotient yet high local sales (75-80% of output according to the sample),⁽⁴⁾ and electrical appliances and cardboard boxes which have very low location quotients though respondent firms sold most of their output outside the region. Despite the magnitude of some of these discrepancies, it was reassuring to discover that they tended to cancel each other out.

The Manufacturing Enquiry also gave some idea about overseas exports, an item in the base which is not taken account of by the location quotient technique. The capacity to export abroad varied markedly not only from industry to industry, but also within the same industry, from firm to firm.⁽⁵⁾ Neglect of this element leads to an underestimate of the base, and an overestimate of the base employment multiplier. However, Scotland exports a relatively low proportion of her national income compared with the United Kingdom, and the low Manufacturing weighting in the North-East economy would suggest that the proportion of regional output for export abroad is even lower than for Scotland as a whole (in spite of important exporting industries such as whisky distilling and textiles). A reasonable estimate might be that 5-7% of total regional employment is engaged in production for overseas markets (this is in line with an export share of 20-25% in the Manufacturing sector, as supported by the sample in the Manufacturing Enquiry). We must also allow for Forces personnel, excluded from D.E.P. statistics, since defence establishments are a component of the export base. These adjustments reduce the basic: non-basic ratio to 1:1.3 or 1.4, and the base multiplier to 2.3 to 2.4.

Despite refinements of this kind, the base multiplier is totally unreliable for forecasting changes in the region's employment from expansion (or contraction) in the export base. We should be surprised to find any consistent tendency for each additional job in the base sector to create about 1½ additional jobs in the region.⁽⁶⁾ A more modest but more useful result of the study is to indicate industries which are disproportionately concentrated in, or absent from, the region. By using the estimates of surplus and deficit workers we are able to identify those sectors where divergences from the national average have a quantitatively significant effect (defined as 0.5% of regional employment). The results are given in Table E.1 below.

⁽¹⁾ See C. M. Tiebout, *The Community Economic Base Study* (1962).

⁽²⁾ For details of these and other measures see J. M. Matilla and W. R. Thompson, 'The Measurement of the Economic Base of the Metropolitan Area', *Land Economics*, 31 (1955).

⁽³⁾ Total 'surplus' workers amounted to 59.1 out of 153.5 thousand workers in employment.

⁽⁴⁾ The sample here may be rather unrepresentative.

⁽⁵⁾ In food processing, for instance, exports varied from zero for some firms to 85% of output for others.

⁽⁶⁾ Estimates of the regional income multiplier suggest that it may be no higher than 1.25 (see G. C. Archibald, 'Regional Multiplier Effects in the U.K.', *Oxford Economic Papers*, 19 (1967) and A. J. Brown et al., 'The "Green Paper" on the Development Areas': Appendix, *The National Institute Economic Review*, No. 40, May 1967). The regional employment multiplier may be even smaller, especially if capacity in local Service industries is underutilised. Despite the margin of error in such estimates (primarily due to the difficulty of assigning a value to the marginal propensity to import), they confirm that base employment multiplier values are much too high for them to be of any use for prediction.

TABLE E.1

Over-represented industries: 'surplus workers' thousands	Under-represented industries: 'deficit workers' thousands
Agriculture and horticulture . . . 0.6	Coal mining . . . 3.4
Bacon, meat and fish products . . . 7.4	Motor vehicle manufacturing . . . 3.1
Fishing . . . 5.7	National Government service . . . 2.6
Construction . . . 4.5	Metal industries n.e.s. . . 2.2
Educational services . . . 5.2	Postal services and telecommunications . . . 2.1
Paper and board . . . 3.0	Radio and other electronic apparatus . . . 1.9
Medical and dental services . . . 2.7	Other services . . . 1.6
Retail distribution . . . 2.5	Aircraft manufacturing . . . 1.6
Other drink industries (i.e. mainly distilling) . . . 2.8	Insurance, banking and finance . . . 1.5
Shipbuilding and marine engineering . . . 1.1	Electrical manufacturing . . . 1.5
Catering, hotels etc. . . 1.0	Ordnance and small arms . . . 1.5
Building materials . . . 1.0	Other printing and publishing . . . 1.0
Woolen and worsted . . . 0.9	Local government service . . . 0.9
Private domestic service . . . 0.9	Chemicals . . . 0.8
Road haulage contracting . . . 0.8	Men's and boys' tailoring . . . 0.8

Table E.1 has some interesting features. In the surplus workers category the heavy dependence of the region on Primary industry and the associated food processing trade is clearly observable, though other industries such as Paper and board, 'Other drink', Shipbuilding and ship repairing and Woolen and worsted figure prominently. However, it is important to note the implication of the table that Service Industries can be basic in the sense that they are supported by outside finance: education and medical services in the public sector and the hotels and catering trade with its links with tourism are the most obvious examples. On the other hand, the data in Table E.1 also

show up the deficiencies of the location quotient technique and its variants as a methodology for base analysis. Some of the over-represented industries (Retail distribution, Construction and Private domestic service) have not much to do with basic activity, and the presence of surplus workers here probably indicates lower productivity in the first two cases and differences in the pattern of demand in the third.

The deficit workers column gives some guidance to the main gaps in the structure of the region's economy. Although some of these gaps reflect the absence of resources (e.g. coal), or the lack of an industrial complex based on engineering (Motor vehicles, Metal industries n.e.s., Aircraft, Electrical machinery and Ordnance and small arms)—deficiencies which cannot or should not be remedied—others may indicate weaknesses in regional structure which are probably eradicable. The most striking feature of this column, however, is the discovery that despite the importance of Service Industries in its economy the region, nevertheless, remains grossly deficient in several key sectors. These are (leaving aside the very heterogeneous 'Other services' category) National Government service, Postal services and telecommunications, and Insurance, banking and finance. Action on the first two is the responsibility of the Government alone, and in the long term remedial measures must be feasible. Insurance, banking and finance is an important service sector since it is often export-orientated. North-East Scotland is not at a serious disadvantage for development in this field except for the critical communications factor. The heavy concentration of Insurance, banking and finance in London and the South East, often for traditional or prestige reasons, is unlikely to be broken up without strong dispersal measures.

Although we have rejected base multiplier theory as a framework for projection, for the reasons outlined, we have suggested that a base study may be useful for understanding the region's economic structure. We have also shown how erroneous it is to allocate the Service industries arbitrarily into the residuary sector and to assume that they can play no independent determining role in the growth process. Finally, the region's large basic sector (over 40% of total employment), emphasises that the prosperity of North-East Scotland is tied up with economic conditions in other regions of the U.K.

II. Service Sector: Supplementary Tables

TABLE E.2
North Eastern Regional Hospital Board:
Beds by Type,
1961 and 1967

Beds	1961	1967
Medical . . .	1,198	1,020
Surgical . . .	709	841
Maternity . . .	520	360
Children . . .	217	235
Mental . . .	2,479	2,674
Long-stay . . .	817	836
Total . . .	5,740	5,915

Source: N.E.R.H.B.

TABLE E.3
Hospital Facilities by Boards of Management, 1961 and 1967

	Employment				Beds				Percentage of nursing staff recruited outside region
	1961		1967		1961		1967		
	Full-time	Part-time	Full-time	Part-time	No.	Occupancy rate	No.	Occupancy rate	
Aberdeen General	1,735	399	2,133	576	1,428	% 89.0	1,450	% 86.7	% 12.6
Aberdeen Special	856	223	926	371	863	72.2	865	72.4	21.6
Royal Cornhill	848	76	994	131	2,038	89.1	2,018	86.3	4.7
Buchan	139	42	133	53	219	78.1	182	87.9	0.9
Kincairdine	76	22	84	55	150	84.0	163	88.3	5.0
Banff	416	76	585	73	583	83.9	605	88.7	12.2
Maray	297	53	303	87	459	84.7	432	89.6	24.2
Regional Board	67	6	129	28					

Source: N.E.R.H.B.

TABLE E.4
Educational Provision in N.E. Scotland, Four Cities and Scotland, 1966

	Expenditure on education per head of population £s	Teacher shortage (per cent of Certificated teachers)	Average No. of pupils per day teacher	Students in further education as per cent of population
N.E. Region . . .	27.4	3.9	18	2.6
Aberdeen . . .	29.3	1.8	17	5.0
Dundee . . .	24.7	7.9	22	3.9
Edinburgh . . .	21.2	3.2	22	3.7
Glasgow . . .	28.8	15.4	24	4.0
Scotland . . .	25.9	8.6	22	2.6

Source: Scottish Educational Statistics, 1967.

TABLE E.5
N.E. Scotland: Educational Provision by Authorities, 1966-67

	Net expenditure per pupil £s	Primary pupil/staff ratio	Secondary pupil/staff ratio	Students in further education as per cent of population
Aberdeen City . . .	193.0	24.2	14.4	5.0
Aberdeen County . . .	172.6	25.5	14.9	0.8
Banff . . .	186.3	26.1	15.3	0.7
Kincairdine . . .	149.5	17.8	15.3	0.6
Maray and Nairn . . .	136.0	29.7	17.7	1.0

Source: Scottish Educational Statistics, 1967.

TABLE E.6
Aberdeen University and its Growth, 1961-68

Year	(1) Treasury grants (£'000s)	(2) Total current expenditure (£'000s)	(3) Student numbers		(4) Academic Staff			(5) Total Employment		
			Full-time	Part-time	Total	Males	Females	Total	Males	Females
1960-1	1,003	1,261	2,016	243	340	300	40	773	465	288
1967-8	2,917	3,825	4,622	527	644	551	93	2,025	1,033	992

Source: University of Aberdeen.

TABLE E.7
N.E. Scotland Service Employees by Occupational Type
thousands

Occupation	Males	Females	Total
Transport and communication workers .	12.0	1.0	13.0
Warehousemen, packers, etc.	3.0	1.7	4.7
Clerical workers	5.3	12.8	18.1
Sales workers	10.2	10.3	20.5
Services, sport and recreation workers .	6.7	18.7	25.4
Administrators (public service only) .	0.4	0.1	0.5
Professional and technical workers .	8.4	8.8	17.2
Armed forces	4.5	0.2	4.7
Total	50.5	59.6	104.1

Source: Sample Census, 1966.

III. Construction: Questionnaire to Firms

Much of the information used in this chapter was derived from a postal questionnaire sent to firms in the Construction industry (M.L.H. 500) in May 1968. The Department of Employment and Productivity supplied information about the number and size of firms employing 11 or more workers. Questionnaires were sent to all firms and local authority departments employing more than 50 workers, and a 50% sample was drawn from firms employing from 11 to 50 workers. For firms employing 10 or fewer workers, a 10% sample was drawn, based on entries in the local telephone directory, on

the assumption that all firms in the Construction industry would possess a telephone and would declare their trade in the entry under their name.

In all, 138 questionnaires were sent out, out of which, after some follow-up, 55 were returned in a form suitable for analysis. The response rate by size of firm was as follows:

51 or more employees	51%
11-50 employees	15%
10 or fewer employees	13%

Measured, however, in terms of employment offered in the industry in the area the responding firms accounted for 52% of all employment.





Aberdeen Harbour: view across quays to River Dee.

Photo by Aerofilm Limited



Exterior: an aerial view looking north-west towards the Upper Don Valley.

Photo by Aerofilm Limited



Elgin: an aerial view looking east

Photo by Science Publications Ltd.



University of Aberdeen: Natural Philosophy (Physics) Building.



Photo by Aberdeen Journals Ltd

Apprentices training at the Engineering Industry Training Group Centre, Aberdeen.



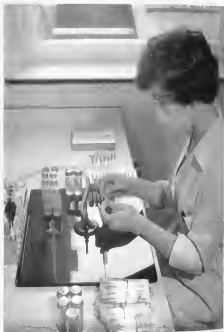
Students training on office machines at the College of Commerce, Aberdeen.

Photo by Aberdeen Journals Ltd.

Checking the calorific value of cattle feed with an 'adiabatic bomb' calorimeter at the Rossett Research Institute, Basildon, near Aberton.



Pipetting bacterial culture suspension into ampoules at the Tary Research Station, Aberton.





The Benfshire Coast: showing Banff and Macduff on either side of the Dornoch.

Photo by Douglas Lindsay



Farming in the Mearns, Kinross-shire.

Photo by A. D. F. Macpherson, Stirling



Fishing boats in Gairloch Harbour, Keweenaw.

Photo by Campy, Boston



Telford's Bridge over the Spey at Craigellachie, built 1815.

Photo by W. A. Sharp, Edinburgh



Gear cutting at the Peterhead works of General Motors Scotland Ltd.

Photo by Aberdeen Journals Ltd.



Automatic steam pressing at the clothing factory of Wilks & Taylor, Aberdeen.

Photo by Aberdeen Journals Ltd.



Operating a milling machine at the Faversham factory of Consolidated Pneumatic Tool Co. Ltd.

Photo by Aberdeen Journal Ltd.



Machine checking at the electric lamp factory of British Lighting Industries Ltd., Buxton

Photo by Ian Johnston, English



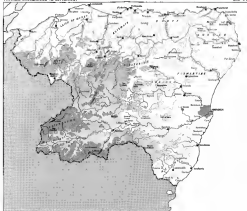
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POPULATION BY DISTRICT

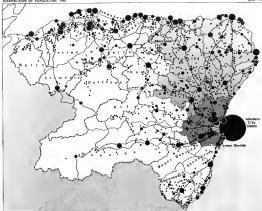


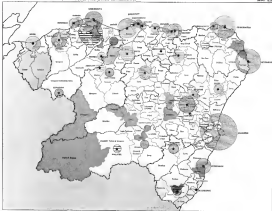
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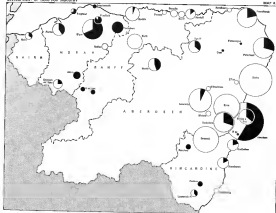
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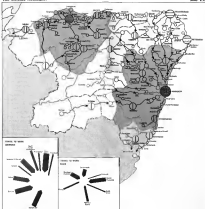






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